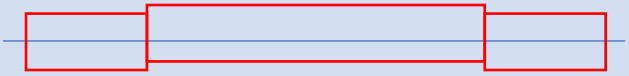
Florentin Smarandache

Neutropsychic Personality



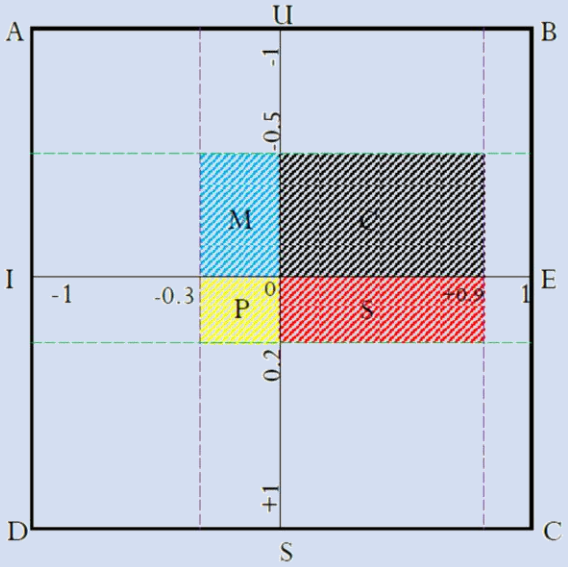


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Table of Contents

Abstract 9
Introduction to Neutropsyche (Preface) 12
1. Introduction to Neutrosophy 21
1.1. Etymology 21
1.2. Definition 21
1.3. Formalization 21
1.4. Main Principle 22
1.5. Fundamental Thesis 22
1.6. Special Applications 22
1.6.1. Neutrosophic Logic 22
1.6.2. Neutrosophic Set 23
1.6.3. Neutrosophic Probability 23
1.6.3. Neutrosophic Statistics 23
1.7. General Applications 23
1.8. Refined Neutrosophy 24
1.8.1. Finitely Refined Neutrosophy 24
1.8.2. Infinitely Countably Refined Neutrosophy 24
1.8.3. Infinitely Uncountably Refined Neutrosophy 24
2. Neutrosophic Philosophical Assumptions 26
3. Introduction to Neutropsyche 28
3.1. Etymology of "neutropsyche" and "neutropsychic" 28
3.2. Definition of Neutropsyche 28
3.3. Neutropsychic Therapy - A Sketch 29
4. Refined Neutrosophic Memory 36
4.1. Acounscious – Neither Conscious, Nor Unconscious 36
4.2. Neutrosophic Memory 36
4.3. Interactions between Conscious, Aconscious, and Unconscious 38

4.4. Latent Conscious / Aconscious / Unconscious 39
4.5. Discrete Refined Neutrosophic Memory 39
4.6. Personal / Group / Collective Sublevels of Unconscious 41
4.7. Personal / Group / Collective sublevels of Conscious .. 42
4.8. Personal / Group / Collective sublevels of Aconscious . 43
4.9. Neutrosophical Logic Value of Aconsciousness..... 44
4.10. Preunconscious, Subunconscious, Semiunconscious.... 44
4.11. Degrees of Conscious, Aconscious, and Unconscious .. 46
4.12. Subdegrees of Preconscious, Subconscious, Semiconscious, Subunconscious, and Preunconscious..... 47
5. Neutrosophic Psychoanalysis 54
5.1. Definition of Neutrosophic Personality..... 54
5.2. Definition of Neutrosophic Psychological System 54
5.3. Dynamic vs. Stable Psychological System 55
5.4. Degrees of Personality Change 56
5.5. Body (*σώμα, sóma*) vs. Soul (*ψυχή, psychí*) 56
5.6. Abrupt Personality Change..... 56
5.7. Personality's Indeterminacy..... 57
5.8. Diagram of Neutrosophic Theory of Personality..... 57
5.9. Neutrosophic Degree of Personality 59
5.10. Dynamicity of Underego, Ego, and Superego..... 60
5.11. Psychological Balance and Counter-Balance..... 62
5.12. Ego as semi-underego and semi-superego 62
5.13. Critics of Psychoanalysis 63
5.14. Critics of Psychological Theories..... 66
5.15. Psychanalysis of Transcendental Persons..... 66
5.16. Conscious Anxiety and Aconscious Anxiety..... 67
5.17. Personality's Influence Factors..... 67
5.18. Inferiority/Superiority Complex and Normal Standard 68
5.19. Lifespan Personality Development..... 69
5.20. Neutrosophic Persona 69
5.21. Parallelism between Under-ego, Ego, and Super-ego .. 69

5.22. Scientific or Metaphoric? 72
5.23. Inner and Outer Conflicts and Cooperation among Underego, Ego, and Superego at all Conscious, Aconscious, and Unconscious Levels and Sublevels 72
5.24. Sub-Triads of <pluri-underegos, pluri-egos, pluri-superegos> 72
5.25. Eros, Aóristos, and Thanatos 75
6. Neutrosophic Personality Traits (A Mathematical Study in Psychology) 77
6.1. Refined Neutrosophic Trait 77
6.2. Pairs of Neutrosophic Personality Trait - antiTrait 78
6.3. Degrees of Trait & antiTrait 79
6.4. Neutrosophic Trait Operator 80
6.4.1. Procedure 80
6.5. Personality Trait Theories 81
6.6. Cardinal / Group / Central / Secondary Traits 82
6.7. Alternative Theories of Trait Personality 82
6.7.1. Myers-Briggs Type Indicator 83
6.7.2. Myers-Briggs Neutrosophic Type Indicator 83
6.7.3. Allport Trait Theory 86
6.7.4. Authoritarian Personality 86
6.8. Popular Theories of Trait Personality 86
6.8.1. Three-Factor Model 87
6.8.2. Three-Factor Neutrosophic Model 88
6.8.3. Five-Factor Model 89
6.8.4. Five-Factor Neutrosophic Model 89
6.8.5. Sixteen-Factor Trait Model 90
6.8.6. n-Factor Trait Neutrosophic Model 91
7. Neutrosophic Temperaments 94
7.1. The Four Classical Temperaments 94
7.2. Definition of Neutrosophic Temperament 94
7.3. Neutrosophic Diagram of Temperaments 96

7.4. Applications of the Neutrosophic Temperaments..... 99
7.4.1. Neutrosophic Single-Valued Diagram of Temperaments (2 factors) 100
7.4.2. Neutrosophic Interval-Valued Diagram of Temperaments (2 factors) 101
7.4.3. Neutrosophic Single-Valued Diagram of n-Factors of A Trait Personality 103
7.4.4. Neutrosophic Interval-Valued Diagram of n-Factors of A Trait Neutrosophic Model 104
8. Neutrosophic Evolution of Trait Personality: Degrees of Evolution, Indeterminacy, and Involution 105
8.1. Example of Degree of Personality Evolution, Indeterminacy (Neutrality), and Involution 105
References 107

ABSTRACT

Neutropsyche is the psychological theory that studies the soul or spirit using the neutrosophy and neutrosohic theories. In other words: Neutrosophic Psychological Theory. It is based on triadic neutrosophic psychological concepts of the form *(<A>, <neutA>, <antiA>).*

Neutropsychic Personality is a neutrosophic dynamic open psychological system of tendencies to feel, think, and act specific to each individual, based on

Neutrosophic Refined Memory: that restructured the division of memory into: *consciousness*, *aconsciousness* (which we introduce as a blend of *consciousness* and *unconsciousness*), and *unconsciousness*. *Aconscious* was further subdivided into *preconscious, subconscious, semiconscious* = *semiunconscious, subunconscious,* and *preunconscious*.

In **Neutrosophic Psychoanalysis** Freud's „id" (*das Es*) was renamed „under-ego" for a symmetry connection with „ego" and „super-ego" and a part his Psychoanalysis was extended, while other part rejected (Oedipus Complex, sexuality as main factor, static personality after adolescence, etc.).

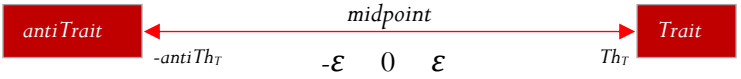
Because the psychoanalysis **underego**, **ego**, **superego** interact at all levels and sublevels of the neutrosophic refined memory, they were extended to *pluri-underegos, pluri-egos, pluri-superegos* since we feel inside simultaneous contradictory and cooperating feelings and thoughts.

In addition to personal and collective unconscious, the *group unconscious* was introduced. And, analogously the

conscious and each sublevel of aconscious were subdivided into: personal, group, and collective.

Besides "Eros" (live) and "Thanatos" (death), we add the amalgamate instinct that has some degree of live and other degree of death that we call "*Aóristos*" (Gr. indeterminate).

All memories have degrees of conscious (c), acounscious (a), and unconscious (u). Then the Refined Neutrosophic Trait-antiTrait Diagram was created:



Refined Neutrosophic antiTrait –Trait Diagram

Each individual has a *degree of antiTrait* and a *degree of Trait* with respect to each antiTrait-Trait personality pair.

Then two Neutrosophic Single-Valued and respectively Interval-Valued Diagrams were constructed, that were extended to any personality dimension $n \geq 1$, where n is the number of antiTrait-Trait pairs.

The *degrees of personality* change with respect to emotions, thoughts, and behaviors vary upon time, space, circumstances, environment, social interactions, family, learning etc.

Neutrosophic Temperament as a mixture of all four classical temperaments { sanguine (s), choleric (c), melancholic (m), and phlegmatic (p) }, since nobody in the world has a pure classical temperament. Actually, everybody has a degree of each of them: s% sanguine, c% choleric, m% melancholic,

and *p*% phlegmatic. Whichever is the highest among *s, c, m, p*, that's the person's frequent classical temperament style.

The Trait Personality manifests a *Neutrosophic Evolution: with Degrees of Evolution, Indeterminacy, and Involution*. Through adaptation and due to social selection, some personality traits *evolve* (and the genes that cause them come into expression), others remain unchanged (*neutra*l) or their change is unclear or *indeterminate* as in neutrosophy (and the genes that cause them stay the same or their change is unclear), and a third category of personality traits - not or less needed in the new environment – *involve* (and the genes that cause them come off their expression).

INTRODUCTION TO NEUTROPSYCHE
(PREFACE)

We first introduce two terms: *neutropsyche* and *neutropsichic*.

Neutropsyche is the psychological theory that studies the soul or spirit using the neutrosophy and neutrosohic theories. In other words: *Neutrosophic Psychological Theory*. It is based on triadic neutrosophic psychological concepts, procedures, ideas, and theories of the form *(<A>, <neutA>, <antiA>),* such as (positive, neutral, negative), and so on. While neutropsychic means *of* or *having to do* with the neutropsyche.

In Neutropsychic Therapy, besides "cleaning" the unconsciousness of repressed memories (negative part) – as stated by psychoanalysis, happy and joyful memories are reactivated and repeated (positive part), and ignorant memories (neutral part) and confusion and vague events (indeterminate part) the consciousness's level that latter may be converted into positive ones.

The concepts of Neutrosophic Psychoanalysis, Neutrosophic Personality Trait, Neutrosophic Temperaments, and Neutrosophic Evolution of Personality used in this book are all subdomains of neutropsyche.

We recall short information on Neutrosophy, which is a new branch of philosophy, which studies the origin, nature, and scope of neutralities, as well as their interactions with different ideational spectra.

It was introduced by Smarandache in 1995 as an extension of dialectics. While Hegel's and Marx's Dialectics deals only with the dynamics of opposites, the Neutrosophy deals with the dynamics of opposites and their neutrals all together: the triad (<A>, <neutA>, <antiA>), where <A> is an entity (concept, idea, theory etc.) and <antiA> is the opposite of <A>, while <neutA> is the neutral between the opposites <A> and <antiA>.

Neutrosophy is the base of Neutrosophic Logic, Neutrosophic Set, Neutrosophic Probability, Neutrosophic Statistics etc. Neutrosophic Logic, Set, Probability, Statistics have large applications in engineering, computer science, multi-criteria decision making, information fusion, image processing, finger and face recognition, medical diagnosis, management, industry, and many fields where indeterminacy occurs. Neutrosophic Logic is a logic in which each proposition has a degree of truth (T), a degree of indeterminacy (neutrality) (I), and a degree of falsehood (F), where as single-valued numbers $T, I, F \in [0, 1]$ and $0 \leq T + I + F \leq 3$. The degrees T, I, F are independent with respect to each other.

Neutrosophy (<A>, <neutA>, <antiA>) is split / refined as follows:

– the entity <A> into sub-entities $<A>_1$, $<A>_2$, …, $<A>_p$;

– the neutral <neutA> into sub-neutrals: $<neutA>_1$, $<neutA>_2$, …, $<neutA>_r$;

– and the opposite <antiA> into sub-opposites: $<antiA>_1$, $<antiA>_2$, …, $<antiA>_s$;

where p, r, s ≥ 1 are integers, and ∞ ≥ p + r + s ≥ 4.

The refinement may be finite or (countably or unaccountably) infinite with respect to some or all <*A*>, <*antiA*>, <*neutA*>.

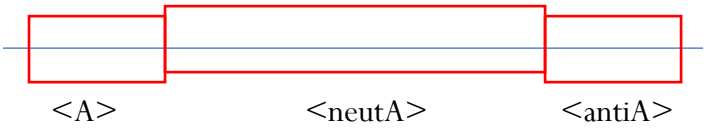


Diagram 1: Neutrosophic Refinement

We further proposed, within the frame of memory, a new concept, "aconscious", which is neither conscious nor unconscious, but a blend of both.

Thus, memory is divided into consciousness, aconsciousness, and unconsciousness. Then the memory is refined, especially the acounscious into: preconscious,

subconscious, semiconscious = semiunconscious, subunconscious, preunconscious.

The diagram of *refined neutrosophic memory* has a symmetric form.

We rename Freud's „id" (das Es) as „under-ego" for a better connection with „ego" and „super-ego" and extend one part of Freud's psychanalysis while rejecting another part (Oedipus Complex, sexuality as main factor, static personality etc.). [16]

In addition of Jung's personal and collective unconscious, we introduce for the first time the *group unconscious*, which is between the personal and collective unconsciousses. It is characteristic to a specific group that the individual belongs to, and has marked him/her mostly.

We then similarly refine the conscious into personal, collective and group conscious. And then refine each sublevel of acounscious.

All memories have degrees of conscious (*c*), acounscious (*a*), and unconscious (*u*).

Then we present other theories of personalities and put several of their ideas together in an attempt of unification of personality theories.

Besides Alfred Adler's inferiority complex, we add another category of persons that "suffer" from *superiority complex*.

Jung's *persona* [92], which is a compromise between what the society expects an individual to be and who he really is, can be represented by a "neutrosophic mask" (*neutrosophic persona*) that has a degree of who he really is (his true self) (*T*), a degree of what the society expects from him to be (*F*), and a degree of indeterminancy (*I*) [a confusion state between who he is and what the society expects him to be, or a perceptible fake state].

We show that Inner and Outer Conflicts and Cooperations among Underego, Ego, and Superego occur at all Conscious, Aconscious, and Unconscious Levels and their Sublevels {[*preconscious, subconscious, semiconscious, semiunconscious, subunconscious, preunconscious*] and [*personal, group, collective]*} interchanging and overlapping.

Don't we often hear inside voices simultaneously telling opposite thoughts, feelings, and behaviors? Don't we suddenly have confused ideas and mixed feelings in the same time? That's why one may consider refinements of the <underego, ego, superego> triad into a plurality of sub-triads, let's denote them <*pluri-underegos, pluri-egos, pluri-superegos*>.

Human behavior is extremely complex, and the result of many simultan interactions among pluri-underegos, pluri-egos, and pluri-superegos.

We refined a neutrosophic trait. We measure a trait by computing the degree of of the trait <*A*> and the degree of the anti-trait <*antiA*>, so each human is on the spectrum between two opposites, as many trait theorists concluded, and the human's position on the spectrum is varying.

There is no individual that entirely *(100%)* fits a trait; this may occur only in an idealistic way.

This is a Refined Neutrosophic Trait-antiTrait Diagram:

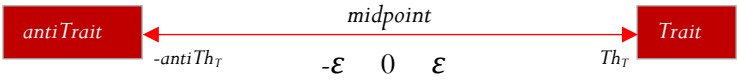


Diagram 2: Refined Neutrosophic Trait-antiTrait

They we define the *degree of the antiTrait* and the *degree of the Trait* that characterizes an individual, and construct a The *Neutrosophic Trait Operator* that cumulates the degrees of the opposites.

The physical Trait-antiTrait of a person is influenced by many factors, such as: genotypes, environment, conditions

of life (food, water, living space), culture, education (from parents and society), weather, friends and enemies, etc.

We present the Three- Five- and Sixteen-Factor Models that exist in the Trait Theories of Personality.

As an easy generalization of all trait models, we consider, any number $n \geq 1$ of *Traits* $<A_j>$ and their corresponding *antiTraits* $<antiA_j>$, for $1 \leq j \leq n$:

$$<A_1> / <antiA_1>,$$
$$<A_2> / <antiA_2>, \ldots,$$
$$<A_n> / <antiA_n>.$$

If the degree of the *Trait* is greater than or equal to the Trait's threshold (Th_T), then the individual is characterized by this Trait. Similarly, if the degree of *antiTrait* is less than or equal to the antiTrait's threshold (*antiThr*), then he/she is characterized by the antiTrait.

In a neighborhood of the midpoint $[-\varepsilon, \varepsilon]$, it is the most confused (*indeterminate*) degree (almost half Trait and half antiTrait) or Trait-antiTrait blending!

We propose the *Neutrosophic Temperament* as a mixture of all four classical temperaments { *sanguine* (s), *choleric* (c), *melancholic* (m), and *phlegmatic* (p) }, since nobody in the world has a pure classical temperament. Actually, everybody has a degree of each of them: s% sanguine, c% choleric, m% melancholic, and p% phlegmatic. Whichever is the

highest among *s, c, m, p*, that's the person's frequent classical temperament style, but the psychological parameters *s, c, m, p* vary upon time, age, situation, experience, environment etc. Also, they are different for each individual.

Then we introduce two neutrosophic single-valued and respectively interval-valued diagrams of personality (dimension *2*); the last one shows the degree of each classical temperament than an individual may have:

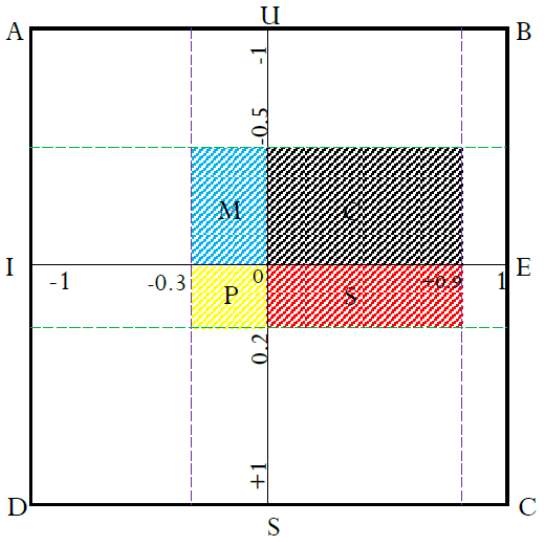


Diagram 3: The Degree of Classical Temperaments

Later, these neutrosophic single-valued and respectively interval-valued diagrams of personality are extended to any personality dimension $n \geq 1$.

The book ends with a section on Neutrosophic Evolution of Trait Personality: Degrees of Evolution, Indeterminacy, and Involution.

Through adaptation and due to social selection, some personality traits *evolve* (and the genes that cause them come into expression), others remain unchanged (*neutra*l) or their change is unclear or *indeterminate* as in neutrosophy (and the genes that cause them stay the same or their change is unclear), and a third category of personality traits - not or less needed in the new environment – *involve* (and the genes that cause them come off their expression).

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1. INTRODUCTION TO NEUTROSOPHY

1.1. Etymology

Neutro-sophy [French *neutre* < Latin *neuter*, neutral, and Greek *sophia*, skill/wisdom] means knowledge of neutral thought.

1.2. Definition

Neutrosophy [1-14] is a new branch of philosophy, which studies the origin, nature, and scope of neutralities, as well as their interactions with different ideational spectra.

It was introduced by the author in 1995 as an extension of dialectics. While Hegel's and Marx's Dialectics deals only with the dynamics of opposites, the Neutrosophy deals with the dynamics of opposites and their neutrals all together.

1.3. Formalization

Let's denote by <A> an entity (idea, or proposition, theory, event, concept, etc.), and by <nonA> what is not <A>, and by <antiA> the opposite of <A>. Also, <neutA> means what is neither <A> nor <antiA>, i.e. neutrality in between the two extremes.

And <nonA> = <neutA> ∪ <antiA>.

For example:

If <A> = white, then <antiA> = black (antonym),

but <nonA> = green, red, blue, yellow, black, etc. (any color, except white),

while <neutA> = green, red, blue, yellow, etc. (any color, except white and black).

Therefore, Neutrosophy deals with the dynamics of <A>, <neutA>, and <antiA> all together.

In the dynamics of opposites from dialectics (<A> and <antiA>), the neutralities <neutA> between them interfere some on the side of <A> and others on the side of <antiA>.

Another example, if two countries C_1 and C_2 (the opposites) go to war, some neutral countries interfere aside C_1 and others aside C_2.

1.4. Main Principle

Between an idea <A> and its opposite <Anti-A>, there is a continuum-power spectrum of neutralities <Neut-A>.

1.5. Fundamental Thesis

Any idea <A> is T% true, I% indeterminate, and F% false, where T, I, $F \subseteq]^{-}0, 1^{+}[$.

1.6. Special Applications

Neutrosophy set the basement for the:

1.6.1. Neutrosophic Logic

Neutrosophic Logic is a logic in which each proposition has a degree of truth (T), a degree of indeterminacy

(neutrality) (I), and a degree of falsehood (F), where T, I, F $\in$ [0, 1] and $0 \leq T + I + F \leq 3$. The degrees T, I, F are independent with respect to each other.

1.6.2. Neutrosophic Set

Neutrosophic Set is a set in which each proposition has a degree of membership (T), a degree of indeterminacy (neutrality) (I), and a degree of nonmembership (F), where T, I, F $\in$ [0, 1] and $0 \leq T + I + F \leq 3$. The degrees T, I, F are independent with respect to each other.

1.6.3. Neutrosophic Probability

Neutrosophic Probability is a probability in which each event E has a chance of occurring (ch(E)), a chance of indeterminacy (ch(neutE)), and a chance of not occurring (ch(antiE)), where ch(E), ch(neutE), ch(antiE) $\in$ [0, 1] and $0 \leq T + I + F \leq 3$. The degrees T, I, F are independent with respect to each other.

1.6.3. Neutrosophic Statistics

Neutrosophic Statistics studies the events of the neutrosophic probability.

1.7. General Applications

Neutrosophic Logic, Set, Probability, Statistics have large applications in engineering, computer science, multi-criteria decision making, information fusion, image processing, finger and face recognition, medical diagnosis,

management, industry, and many fields where indeterminacy occurs.

1.8. Refined Neutrosophy

1.8.1. Finitely Refined Neutrosophy

We can refine (split):

– the entity <A> into sub-entities $<A>_1$, $<A>_2$, …, $<A>_p$;

– the neutral <neutA> into sub-neutrals: $<neutA>_1$, $<neutA>_2$, …, $<neutA>_r$;

– and the opposite <antiA> into sub-opposites: $<antiA>_1$, $<antiA>_2$, …, $<antiA>_s$;

where $p, r, s \geq 1$ are integers, and $\infty > p + r + s \geq 4$.

Hence for the sum $p + r + s$ finite, we have a finitely refined neutrosophic set.

1.8.2. Infinitely Countably Refined Neutrosophy

If $p + r + s = \infty$, or at least one of p, r, or s been equal to ∞, then one has an infinitely countably refined neutrosophic set.

1.8.3. Infinitely Uncountably Refined Neutrosophy

Let <A> be an entity (notion, idea, theory, etc.) and <antiA> be its opposite.

Between <A> and <antiA>, according to **neutrosophy** – a new brand of philosophy, there is a continuum of neutralities <neutA>:

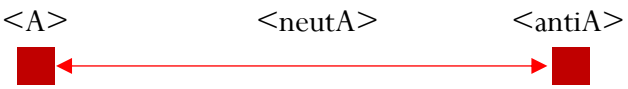


Diagram 4: The Continuum of Neutralities

<neutA> is neither <A>, nor <antiA> or <neutA> is a mixture of <A> and <antiA>, or $<neutA> = \alpha \cdot <A> + \beta<antiA>$, where $\alpha, \beta \in [0, 1]$.

But <A> and <antiA> can be refined into sub-entities $<A>_1, <A>_2, \ldots, <A>_p$ and respectively sub-entities $<antiA>_1, <antiA>_2, \ldots, <antiA>_r$, and similarly $<neutA>_1, <neutA>_2, \ldots, <neutA>_s$, where ***p, r, s*** are integers ≥ 1, as in **refined neutrosophy**.

The refinement may be (countably or unaccountably) infinitely with respect to some or all <*A*>, <*antiA*>, <*neutA*>.

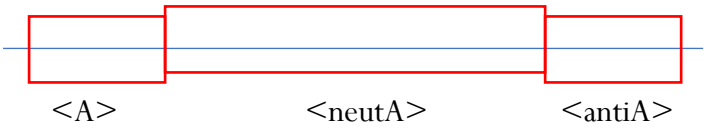


Diagram of Neutrosophic Refinement

2. NEUTROSOPHIC PHILOSOPHICAL ASSUMPTIONS

In Philosophy, as in other soft sciences and sometimes even in hard sciences, a question may have no answer – as in neutrosophy <*neutA*> (neither <*A*> nor <*antiA*>).

Regarding the classical philosophical assumption: **Is it <*A*> or <*antiA*> ?**... the neutrosophic philosophical assumptions answer that: **It is in between them**! That is actually a degree of <*A*> and a degree of <*antiA*>. With respect to each assumption, there exists an $<A>_{threshold}$ {denoted Th_A} and an $<antiA>_{threshold}$ {denoted -*antiThA*}.

If the degree of <*A*> is greater than or equal to Th_A, then we may approximate the assumption to <*A*>. Similarly, if the degree of <*antiA*> is less than or equal to $-Th_{antiA}$, then we may approximate the assumption to <*antiA*>. The midpoint between <*A*> and <*antiA*> is the complete indeterminacy between extremes. In between these opposites, there is an infinitude of continuum-included middles:

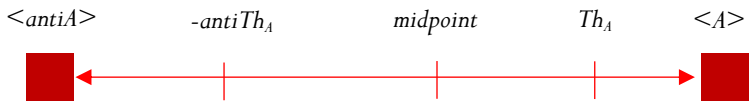


Diagram 5: The Continuum-Included Middles
<antiA> -antiThA midpoint ThA <A>

where <A> vs. <antiA> may be any pair of opposites from below:

Nature vs. Nurture

Optimism vs. Pessimism

Continuous vs. Discontinuous

Uniqueness vs. Universality

Physiological vs. Motivation

Free Will vs. Determinism

Early Personality Formation vs. Late Personality Formation

Cultural Determinism vs. Cultural Transcendence

Stage Development vs. Non Stage Development

Conscious Motivation vs. Unconscious Motivation

3. INTRODUCTION TO NEUTROPSYCHE

Neutropsyche means Neutrosophic Psychological Theory.

3.1. Etymology of "neutropsyche" and "neutropsychic"

From an etymologically point of view,

"neutropsyche" [noun] < neutro + psyche:

– *neutro* < Medieval English neutre < Medieval French neutre < Lat. neuter, neutral [adj., noun, verb] (according to Webster's New World Dictionary)**;**

– and *psyche* [noun] < Gr. ψυχή (*psychí*), soul, spirit, (inner) self.

Its derivative, "neutropsychic"[adj.] < neutro + psychic:

– *psychic* [adj.] < Gr. ψυχικό (*psychikó*), spiritual < Gr. ψυχή (*psychí*), soul, spirit, (inner) self.

Neutropsychic means of or having to do with the neutropsyche.

3.2. Definition of Neutropsyche

Neutropsyche is the psychological theory that studies the soul or spirit using the neutrosophy and neutrosohic theories.

It is based on triadic neutrosophic psychological concepts, procedures, ideas, and theories of the form *(<A>, <neutA>, <antiA>),* such as (positive, neutral, negative),

(good behavior, ignorant behavior, bad behavior), (taking the decision to act, pending, taking the decision not to act), (sensitive, moderate, insensitive), (under-reacting, normally reacting, over-reacting), (under-thinking, normal thinking, over-thinking), and so on, and their refinements as *(<A_j>, <$neutA_j$>, <$antiA_j$>).*

Neutropsyche computes *degrees of truth / indeterminacy / falsehood* of psychological attributes, concepts, principles, hypotheses, theories; and the *degrees of appurtenance* (*membership / indeterminacy / nonmembership)* of psychological concepts to various psychological concepts and theories.

3.3. Neutropsychic Therapy - A Sketch

While psychoanalysis is a *talking cure*, we consider it as incomplete treatment. Not only by talking, but also by freely *drawing and painting*, by listening to *music*, by freely *(automatically) writing down* whatever comes into our mind without censoring our thoughts, by *playing*, by *laughing therapy* (saying verbal jokes, watching comic movies, and reading comic books), by writing automatic (no auto-censorship) *poetry and stories*, by *doing scientific research*, and so on.

Therefore, we need to keep our brain busy with activities different from those that provoked our psychological discomfort.

In Neutropsychic Therapy, besides "cleaning" the unconsciousness of repressed memories (negative part) – as stated by psychoanalysis, happy and joyful memories are reactivated and repeated (positive part), and ignorant memories (neutral part) and confusion and vague events (indeterminate part) are brought at the consciousness's level that latter may be converted into positive ones.

Solve the internal conflicts about writing them down in your diary, or confessing them to friends or to a psychiatrist (negative part neutralized). Telling them with loud voice is alike pulling these inner conflicts out and throwing them away.

Enhance the internal harmonies by remembering and repeating them (positive part reactivated, or increases).

Filter confused and unclear memories and extract the clear part of them (indeterminate part purified by selecting from it the determinate part).

Do not think at all, or very little to situations or persons that produced you anxiety, obsessions and depressions [avoid negative thinking].

Program your consciousness, aconsciousness, and unconsciousness by repetition: repeat a sentence that calms down your anxiety [focus on positive thinking]. Such

sentence will fall into acounsciousness (becoming partially indeterminate) and into unconsciousness, and later it may come back to consciousness. Since, there is time when we are happy without any reason – just the happiness comes from inside.

Other time, we feel angry and in bad mood similarly without any explanation whatsoever! – Just the unhappiness comes from inside…

Use neutral thinking too by dedicating yourself to scientific study or literary lecture or other activity that takes you away from the problem thinking.

Enhance activity outside of the problem that produces depression – in order to keep your mind busy and focused on other directions.

Explore, psychologically, your inner and outer worlds: self-investigation, self-discovery, self-description… Multi-introspection…

Use introspection and "outer-spection" (the opposite of "intro-spection").

Do large breath (inspiration on nose and expiration on mouth).

Listen to sounds that touch your soul (preferably pleasant music).

Run in free cold air, or do physical exercises in the gym.

Sleep enough hours, well and deep, since the dreams are part of the psychotherapy.

Much sex is healthier than less sex…

By *meditation*, the practitioner explores his deep inner world. So, meditate!

Use *autosuggestion:* I am the greatest. I'll always win.
If I didn't win now, I'll win next time.

Playing games therapy.

Acting in drama therapy…

Transcendental experiences surpass our dimensions and physical senses; they look to be surreal, yet they still play a role in personality development.

Have the conscious, aconscious, and unconscious peacefully cooperate.

Train your positive and neutral emotions to annihilate the negative ones.

The anxiety for been *unable to take a decision*… Fighting with yourself for yes or no, but still remaining in pending… What to do? *Accept the risk* of taking it.

Patients should talk not only about their *difficulties*, as said in psychoanalysis, but about their *joys*, pleasures, dreams, plans for the immediate future – to give them hopes, not despairs…

In the research of brain activity (*neuroscience*) the *quantum mechanics* will play greater role in the future.

Depression is caused by turning guilt-ridden anger on the self (Freud, "Mourning and Melancholia", 1917, [16]). What about "educating" the patient that he is above guilt? Or any guilt can be overcome? The psychiatric may employ the analytic neutrality (neither approving, nor disapproving the guilt of the patient), or be always on the side of the patient to encourage him.

Power of *identification with the leader* and with other members in a group (Freud, "Group Psychology and the Analysis of the Ego", 1920, [16]). Why when watching a movie, a theatrical drama, or reading a story, or listening to a speaker identifies with the main character? A weaker individual may identify with a weaker character, a medium individual with a medium character – to be closer to reality, because identifying with the leader bring disillusions and suffering to individual after exiting the group… He absorb distorted memories about himself into his acounsciousness and unconsciousness that later will surface in anxiety… The past hunts the present.

In order to relieve the pressure, Freud proposed to make the unconscious conscious ("Three Essays on the Theory of sexuality", 1905, [16]). We think the opposite works too in therapy: to make the conscious unconscious for forgetting bothering memories.

Conflicts are not only between desire and guilt (Freud, "Inhibitions, Symptoms and Anxiety", 1926, [16]), but sundry desires: which one to choose?

Repression is one of the many *defense mechanisms* in order to reduce anxiety (Freud, "The Ego and the Id", 1923, [16]). Nonetheless, explosion (as diagonally opposed) vocally, or brutally hitting an object, may faster and abruptly discharge the soul and mind!

Use *self-deception* in treatment to move out of the problem: interpret the negative and neutral as positive. Or just ignore the negative… it is not the end of the world!… pretending it is unimportant… [*Defend me from… myself!…* as a proverb says.]

Accept the normality of the abnormal feelings.

Be addicted to… non-addiction!

Check the rational part of the irrational…

Simulate how to become what you are not.

Check how the dysfunctional functions.

Distort your distortion… back to normal!

Repulse your impulse.

Why the acounscious or unconscious fantasy worlds becomes reality?…

Why the consciousness control over situations gets out of control?…

Why your inner weakness overpower your strength?

Ahead of Freud's "pleasure principle" (*libido*) let's set the duty principle. [16]

A *sweet repetition* will charge your memory at all levels with positive energy. A *bitter repetition* will charge with negative energy…

Personality develops not only due to *internal psychological conflicts*, but to *internal and external psychological harmonies* and by soul's tranquility. Of course, in a way it develops due to conflicts, and in another way due to harmonies. Similarly to the body living in bad or good physical conditions.

Personality develops not only through a series of stages, but may abruptly too when a trauma suddenly occurs. We may talk about ***psychological mutation**s*, alike the biological mutations that occur to species.

You should *learn how to agree to disagree* with respect to your negative things.

You're the best psychiatrist of yourself!

4. REFINED NEUTROSOPHIC MEMORY

According to Sigmund Freud [16], memory is divided into three parts: conscious, preconscious, and unconscious.

4.1. Acounscious – Neither Conscious, Nor Unconscious

We reorganize and extend this division by adding the neutral/indeterminate part, that we call "aconscious", which is neither conscious nor unconscious, but a blend of both.

To be "acouncious" means: to be ignorant, impassive, indifferent, senseless, unfeeling.

And further we refine these fundamental memory parts: conscious, aconscious, and unconscious.

4.2. Neutrosophic Memory

Memory is thus divided into three main parts. It is a symmetric triad of the form (<A>, <neutA>, <antiA>) as in neutrosophy:

1) *Conscious*, meaning things that we are currently aware of. (It corresponds to <A>.)

2) *Unconscious*, which comprises things that we are not aware of; they are hard to access because they are deep inside our mind. It is the opposite of conscious. (It corresponds to <antiA>.)

According to Webster Dictionary, unconscious means:

"not endowed with consciousness; mindless; [...]

(Psychoanalysis) the sum of all thoughts, memories, impulses, desires, feelings, etc. of which the individual is not conscious but which influence the emotions and behavior; that part of one's psyche which comprises repressed material of this nature" (p. 1453).

We first cite a Webster definition since it is more objective by comparison with subjective definitions given by biased theorists.

Freud [15, 16] has considered the unconscious as a repository for unacceptable desires and ideas by the society, and traumatic memories.

3) *Aconscious*. We coin now for the first time the concept of "aconscious" (adj.), the "aconscious" (noun), and the derivatives "aconsciousness" (noun) and "aconsciously" (adv.), which etymologically means *away from conscious and unconscious, or neither conscious nor unconscious, but in between, or a mixture of conscious and unconscious – a vague buffer zone between them*.

(It corresponds to <neutA> or Indeterminacy, as in Neutrosophy.)

Doing a search on American search engine Google (*google.com*), European search engine Bing (*bing.com*), and

Chinese search engine (*baidu.com*) for the word "aconscious" on February 15th, 2018, we got no entry.

Also, the concept "aconscious" does not exist in English, Latin, Greek languages – using Google's translation dictionaries.

The consciousness, aconsciousness, and unconsciousness are the sources of positive, neutral (or blended), and negative emotions, thoughts, and behaviors throughout our lifespan.

4.3. Interactions between Conscious, Aconscious, and Unconscious

a) There are a permanent communications, connections, disputes between conscious, aconscious and unconscious (and between their sublevels).

b) In some situations, our unconscious is stronger than the conscious, and we may take stupid, wrong actions (decisions). In other situation, the unconscious may take us in right directions without us realizing it.

> Both are like we are taken by the autopilot in the opposite or right directions.
>
> In other situations, our conscious is stronger than the unconscious so we avoid stupidity and unreasonable; or our conscious may push us on the wrong way.

c) While when the aconscious is strongest, we are in a pending decision, confused, not knowing what to do.

Conflicts among parts of the mind occur at all memory levels and sublevels at different degrees, not mostly at unconscious as suggested by Freud [15, 16].

There also take place conflicts between biological drives and social expectations.

Human behavior is the result of interaction among conscious, acounscious, and unconscious.

Upsetting things sink out from conscious to aconscious or directly to unconscious and get disintegrated after a while by the happy things, or become forgotten or stifled.

4.4. Latent Conscious / Aconscious / Unconscious

We have latency at all memory's levels:

- latent conscious,
- latent aconscious;
- latent unconscious.

And at memory's sublevels.

4.5. Discrete Refined Neutrosophic Memory

Further on, this memory triad is discretely refined as:

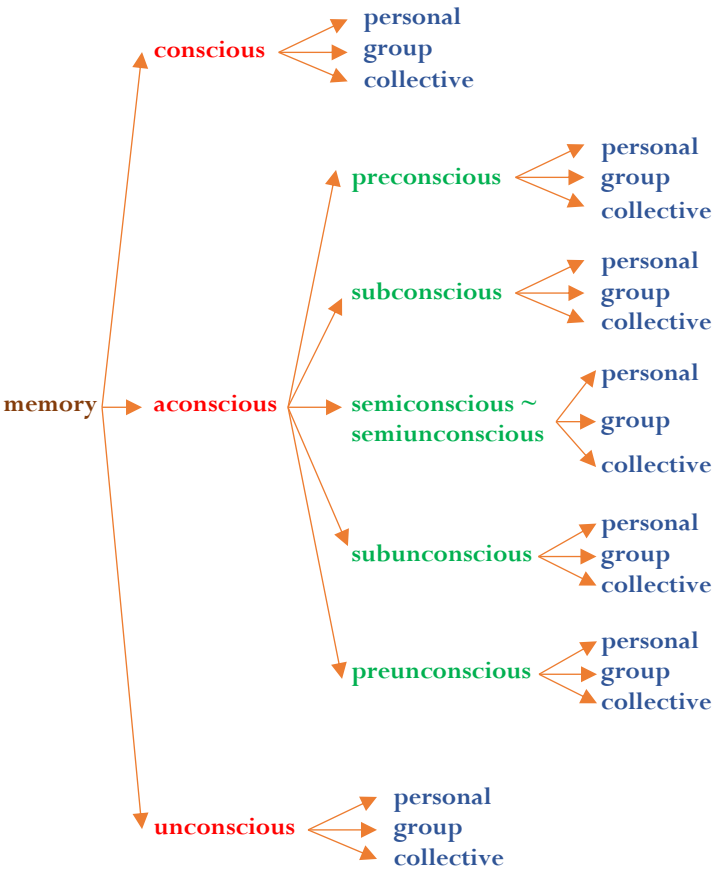


Diagram 6: Refined Neutrosophic Memory

This is a symmetric **discrete refined neutrosophic memory**, approximately reflecting today's development that we now design for first time.

In a general way, we represent this diagram as:

($<A>_1$, $<A>_2$, $<A>_3$; $<neutA>_1$, $<neutA>_2$, $<neutA>_3$, $<neutA>_4$, $<neutA>_5$; $<antiA>_1$, $<antiA>_2$, $<antiA>_3$) as in refined neutrosophy.

Nonetheless, future research and identification of new psychological processes related to memory will result in a finer refinement of the above diagram.

4.6. Personal / Group / Collective Sublevels of Unconscious

Carl Jung [92] has divided the unconscious into:

– **personal unconscious**, which is specific to each individual, and comprises forgotten or suppressed conscious;

– and **collective unconscious**, which is characteristic to the whole human species, and comprises ancestral memories called "archetypes" (universal meaning images) and mental patterns as inherited psychic structures (1928).

In addition to these, we now introduce for the first time the **group unconscious**, which is between the personal and collective unconsciousses. It is characteristic to a specific group that the individual belongs to, and has marked him/her mostly.

A real case I heard from a University of New Mexico professor and coworker. A relative of hers, descendant from Dutch emigrants to the United States, spoke no Dutch, only

English. One day, he had a terrible accident and was heavily hit in the head temple… Unconsciously, he started to speak Dutch words for several moments… inherited from his ancestors into his unconsciousness. But, when he awaked, he did not remember anything, and he spoke no Dutch.

4.7. Personal / Group / Collective sublevels of Conscious

Analogously, we now split (refine) for the first time the consciousness into:

a) **personal consciousness**, specific to each individual, and comprising particular things that only the individual is aware of;

b) **collective consciousness**, characteristic to whole human species, and comprising general things that all people are aware of (for example, the humans are aware that they have to eat, drink, reproduce etc.);

c) and **group consciousness**, characteristic to a specific group, and comprising group things (customs, traditions, believes) that all group members are aware of (for example, people are aware they belong to a specific religion, or to a specific culture, or to a specific ethnicity, or to a specific geographic region, or speaking a common native language, etc.).

4.8. Personal / Group / Collective sublevels of Aconscious

The **aconsciousnes**, as an amalgam of consciousness and unconsciousness, is the indeterminate, ambiguous, vague zone where conscious and unconscious interfere. It is a transition space, or a mediation between opposites.

Similarly, we now split (refine) for the first time each sublevel SL ∈ { preconscious, subconscious, semiconscious = semiunconscious, subunconscious, and preunconscious } of the aconsciousness into:

a) **personal aconsciousness at sublevel SL**, specific to each individual, and comprising particular things that only the individual is confused (indeterminate) about;

b) **collective aconsciousness at sublevel SL**, characteristic to whole human species, and comprising general things that all people are confused (indeterminate) about (for example, the humans are not sure if the human race has originated from another planet, brought accidentally by a meteorite – as some biological theory asserts);

c) and **group aconsciousness at sublevel SL**, characteristic to a specific group, and comprising group things (customs, traditions, believes) that all group members are confused about (for example, people that are

not sure if they belong to a specific religion, or to a specific culture, or to a specific ethnicity, etc.).

4.9. Neutrosophical Logic Value of Aconsciousness

Therefore, from a neutrosophic logic point of view, the aconsciousness has a degree of conscious (c), and a degree of unconscious (u), where $c, u \in [0,1]$, and $0 \leq c + u \leq 2$.

With fuzzy logic or intuitionistic fuzzy logic, we cannot characterize the aconscious(ness), since in these logics $c + u \leq 1$.

But we need $c + u > 1$ in order to specially characterize preconscious and preunconscious.

4.10. Preunconscious, Subunconscious, Semiunconscious

We, for the first time now, introduce three more psychological concepts: the **preunconscious** and **subunconscious** respectively, and call semiconscious as **semiunconscious**, since they are about the same: semiconscious ≈ semiunconscious.

Aconscious is split (refined) into five parts (in the future there might be more parts, when new aconscious processes may be discovered): preconscious, *subconscious*, *semiconscious* (*semiunconscious*), *subunconscious*, and *preunconscious*.

Similarly, the aconscious is divided into ***personal aconscious***, ***group aconscious***, and ***collective aconscious***, and they are referred to partially conscious and partially unconscious things (memories, thoughts, behaviors), at personal, group, or collective level respectively, that are not transmitted clearly from generation to generation, producing deviated customs.

The preconscious was introduced by S. Freud [16]. He described it as made up from inactive memories that are ordinary, but they can be activated.

According to Webster Dictionary, preconscious is "psychoanalysis of or pertaining to that part of a person's mental activity which is not immediately conscious, but which can be easily recalled" (p. 1061).

It is the movement from **down** (unconscious) to **up** (conscious).

It is what Paul Popescu-Neveanu [88, 89] has called "potential latent conscious"; or conscious that exists but is not exteriorly manifested, yet popping up in specific conditions; or a "transparent nonconflictual unconscious"; or a "spare of information", or "potential memory" (M. Ralea, H. Piéron), or "faint or forgotten conscious" (Th. Ribot); or "psychological automatisms formed by repetitions and fragmentations" (P. Janet); or "non-

reflexive operational structures" (Jean Piaget); or "normal unconscious" (M. Pradines) [33, 84, 93, 94].

The more complex is an activity, the more automated actions are needed (W. James). Therefore, the more preconscious work should be involved. The automated sensorial signals link to each other, as a chain, forming a **dynamic stereotype** (I. P. Pavlov), or a functional matrix (as in cybernetics).

Upsetting things sink out from conscious to aconscious or directly to unconscious and may get disintegrated after a while by the happy things, or may become forgotten or stifled.

In the neutrosophic logic value an entity (proposition, concept, etc.) has a degree of truth (t), a degree of indeterminacy (i), and a degree of falsehood (f), where $t, i, f \in [0, 1]$, and $0 \leq t + i + f \leq 3$.

And we write NL(entity) = (t, i, f).

4.11. Degrees of Conscious, Aconscious, and Unconscious

In our neutrosophic psychological applications we use the notation,

NL(entity) = (c, a, u),

where

c = degree of conscious (truth);

a = degree of acounscious (indeterminacy): not sure if it's conscious or unconscious, or a blend of both);

u = degree of unconscious (falsehood).

4.12. Subdegrees of Preconscious, Subconscious, Semiconscious, Subunconscious, and Preunconscious

Our thoughts, emotions, and behaviors have degrees of conscious (c), aconscious (a = indeterminacy, neither conscious nor unconscious, or both mixed), and unconscious (u), with $c, a, u \in [0, 1]$, while "a" can be further refined into subdegrees of preconscious (**pre*c***), subconscious (**sub*c***), semiconscious ≈ semiunconscious (**semi**), subunconscious (**sub*u***), and preunconscious (**pre*u***).

There is a triple continuum spectrum of conscious-aconscious-unconscious thoughts, emotions, and behaviors.

Using neutrosophic logic, we mathematically classify and distinguish between such psychological phenomena.

For example:

NL(conscious) = (1, 0, 0);

NL(acounscious) = (0, 1, 0);

and *NL(unconscious)* = $(0, a, 1)$, where $a \in (0, 1]$, leaving room for indeterminacy (unknown, unclear).

Then *NL(preconscious)* $= (1, 0, u)$, where u is a small number, $u > 0$, meaning that although the preconscious is entirely in conscious (since $c = 1$), there is some non-zero degree of unconscious ($u > 0$) that characterizes the preconscious.

The subconscious is between conscious and unconscious, it is formed by partial conscious and partial unconscious, as a general neutrosophic indeterminacy; it is a neutrosophic memory… i.e. memories that we are partially aware of and partially unaware of, and when we try to recall then we get unclear / incomplete / indeterminate images / sounds / ideas about them.

The subconscious is partially sunk into unconscious and partially surfacing towards the conscious, like a heavy object floating o the sea.

According to Webster Dictionary, the subconscious is "occurring without perception, or with only slight perception, on the part of individual: said of mental processes and reactions; not fully conscious, imperfectly aware; subconscious mental activity / in psychiatry)" (p. 1333).

We can easily characterize it using the neutrosophic logic:

NL(subconscious) $= (c, a, u)$,

with $c \gg u$ (c is much greater than u).

Therefore, the degree of conscious is much greater than the degree of unconscious.

In some literature, there is confusion between preconscious and subconscious.

The distinction between preconscious and subconscious is that the memories from preconscious can be retrieved entirely (100%, or $c = 1$) into the conscious, while the memories from subconscious can only partially be retrieved into the conscious ($c < 1$, but $c \gg u$).

Because there are memories that, when we try to recover them, we remember only a part of them.

The semiconscious (adj.), according to Webster Dictionary, means "not fully conscious or awake; half-conscious". As noun is used "semiconsciousness" (p. 1220). We now introduce the terms of "semiunconscious" (adj.) and "semiunconsciousness" (noun), which are roughly equivalent to semiconscious and semiconsciousness respectively, meaning half-conscious and half-unconscious.

From a neutrosophic point of view,

NL (*semiconscious*) ~ NL (*semiunconscious*) $= (c, a, u)$, where $c \approx u$,

or the degree of conscious is approximately equal to the degree of unconscious.

In classical psychology, $c = u = 0.5$, or 50% conscious and 50% unconscious.

In neutrosophic psychology, this definition is extended in order to catch more possibilities. For example:

$c = u = 0.4$, and $a = 0.2$;

or $c = u = 0.7$, and $a = 0.5$;

etc.

We recall that in neutrosophic logic it is allowed the sum of the neutrosophic components to exceed 1 and get up to 3:

$c + a + u \leq 3$.

This occurs if one considers different points of views in estimating "c", "a", and "u" respectively.

E.g. from a point of view (of some parameters), $c = 0.7$, while from other point of view (of other parameters) it may be that $u = 0.7$ as well.

Semiconscious (semiunconscious) psychological manifestations are: the half state between sleep and wakefulness (hypnagogic), the hypnosis, and the trance (when the consciousness is half altered), semiawakening etc.

Semiconscious (and semiunconscious) are liminal, for being situated at the limen, where perception and non-perception cross over one into the other, they blend creating a medley inconspicuous area.

Those who cannot distinguish right from wrong, good from bad, in general <A> from <antiA> also fall into this category – the deranged, demented, mad, lunatic… commit horrible acts such as mass killing of persons that had nothing to do with them.

Mentally ill people act under a high-degree of unconsciousness that strongly influences their emotions, thoughts, and behaviors. They belong to the subunconsciousness category.

The subunconscious (adj.) and subuncounsciousness (noun) that we introduce now have the neutrosophic logic value:

NL(subunconscious) $= (c, a, u)$*, with* $c \ll u$*,*

or the degree of conscious is very small in comparison with the degree of unconscious.

Subunconscious psychological phenomena are: the states which are closer to the sleep than to the wakefulness (we call them *deep hypnagogic*), and similarly "deep hypnosis" and "deep trance" (when the degree of unconscious is much larger then the degree of conscious).

The preunconscious (adj.) and preunconsciousness (noun) are the opposites of preconscious and preconsciousness respectively.

NL(preunconscious) $= (c, a, u)$

with c a small number, $c > 0$, and the degree of unconscious very high, close to 100% ($u \approx 1$), but there is some little degree of conscious ($c > 0$).

In the conflict between conscious and unconscious, the preunconscious is on the side of unconscious, unlike the preconscious that is on the side of conscious.

Also, unlike the preconscious, the preunconscious is the movement from **up** (conscious) to **down** (unconscious).

It has reverse characteristic in reference to the preconscious. Therefore, the preunconscious is a "latent unconscious", a "potential unconscious", a warehouse for forgotten information with higher chance to completely fall into the dark unconscious and never be recovered by the conscious. Or subunconsciously formed automatisms that fall into preunconscious due to non-usage.

There are **instinctive automatisms**, which are different from the **learned automatisms** (resulted from repetition, as in preconscious).

The subunconscious and preunconscious are below the conscious threshold. They are thus subliminal, using subunconscious and preunconscious stimuli respectively taken by repetition.

Older people partially loose their memory; they for example go to a room but forget what they supposed to do in it. After a few moments they may entirely remember

(meaning their desire fell from conscious to preconscious, and come back to conscious), or incompletely remember (meaning their desire fell from conscious to subconscious, then back to conscious), or they only half remember (meaning their desire fell from conscious to semiconscious, and back to conscious), or only very little (vaguely) remember (meaning their desire fell from conscious to subunconscious, then back to conscious), or they remember nothing (meaning from conscious their desire fell to preunconscious or unconscious, and never come back to conscious).

5. NEUTROSOPHIC PSYCHOANALYSIS

In this section we extend a part of Sigmund Freud (1856-1939) Psychanalysis [16] to the Neutrosophic Psychoanalysis, while rejecting the other part, and in the same time we absorb ideas from many theories of psychological personality – by fusioning heterogeneous psychological traits and concepts into the newly Neutrosophic Theory of Personality. We do a *neutrosophication of psychanalysis*.

5.1. Definition of Neutrosophic Personality

A Neutrosophic Personality is a neutrosophic open dynamic psychological system of tendencies to feel, think, and act specific to each individual.

5.2. Definition of Neutrosophic Psychological System

A neutrosophic psychological system (Smarandache, 2015) is a quasi- or (t,i,f)–classical system, in the sense that the neutrosophic system deals with psychological quasi-terms/-concepts/-attributes/-laws/-principles/-ideas [or psychological (t,i,f)-terms/-concepts/-attributes/-laws/-principles/-ideas], which are approximations of the classical terms/concepts/attributes/laws/principles/ideas, i.e. they are partially true/membership/probable (t%), partially indeterminate (i%), and partially false/ nonmem-

bership/improbable (f%), where t,i,f are subsets of the unitary interval [0,1].

{We recall that 'quasi' means relative(ly), approximate(ly), almost, near, partial(ly), etc. or mathematically 'quasi' means *(t,i,f)-true* in a neutrosophic way.}

5.3. Dynamic vs. Stable Psychological System

This definition is an alteration or improvement of the classical definition through the fact that "stable system" (Philip Zimbardo [74-78]) is replaced by "dynamic system".

We prove that personality is a "dynamic", not "stable" system. Also, that the personality formation does not end at the time of hitting puberty, but it continues all life.

The personality does not remain the same the whole individual's life, but it changes upon time, space and circumstances, individual's experience, individual's study and learning (by himself/herself or from others), individual's new interests and motivations, individual's status of being, health, or individual's repeated or new situations. As a consequence, an individual's personality varies in a given range. Individual's personality is characterized by some degree of indeterminacy, that's why we call it Neutrosophic Personality.

5.4. Degrees of Personality Change

It has been observed in the past that the emotions, thoughts, and behaviors are continuously in a process of change, and so the personality.

The degrees of change vary upon time and space and situations: with respect to **emotions** {being more sensitive, or less sensitive, or in unchanged or confusing/ indeterminate state between *sensitive, a-sensitive* and *un-sensitive* (as a neutrosophic triad) with respect to the previous emotions}, and similarly for **thinking** (more deeply thinking, less deeply thinking, or unchanged / indeterminate style of thinking with respect to the previous thinking), and for the **behavior** (stronger, weaker, unchanged / indeterminate with respect to the previous behavior).

5.5. Body (*σώμα, sóma*) vs. Soul (*ψυχή, psychí*)

While through passing of time the individual's body changes very much, his psyche changes very little – that's why the appearance that psyche doesn't change at all.

5.6. Abrupt Personality Change

An individual that suffered a trauma (death of a loved one, loss of a large sum of money, or a terrible accident making him incapacitated for life) will not have the same smile as before, would not have the same sense of humor as

he did, his previous passion for life would reverse to suicide attempts, his laugh would fade and wither.

In the opposite way, an individual permanently in bad mood, by winning the lottery or gaining an international competition, may get a better mood.

5.7. Personality's Indeterminacy

Some extreme (positive or negative) situations may completely change an individual's personality.

The personality is continuously fluctuating between extremes, and often confusing amidst them.

Somebody may trash you and another may praise you in the same time… producing a blend or hatred and joy in you – a profound neutrosophic indeterminacy.

5.8. Diagram of Neutrosophic Theory of Personality

We may cumulate all parameters that determine changes in emotions/thinking/behavior into a single one, at time (t), since any change, no matter what parameters produce it, occurs at a certain time.

Therefore, we have the following Diagram of Neutrosophic Theory of Personality:

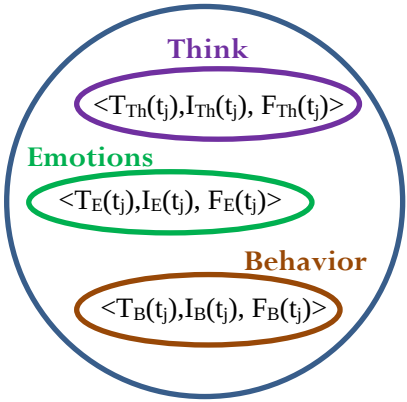


Diagram 7: Neutrosophic Personality

where j = 0, 1, 2,…, and t_0 (= starting time), then t_1, t_2,… represent the time sequence.

For examples, if the time unit is one day, then t_1, t_2, t_3,… may be: day 1 (after starting time t_0), day 2, day 3,…; if the time unit is one week or respectively one month, then one has: week 1 (after starting time t_0), then week 2, week 3,…, or month 1 (after starting time t_0), then month 2, month 3, … .

Any time unit may be selected, which time unit is more convenient for each application, even fraction time unit, let's choose t_1 = 5 hours, or t_1 = 3 days etc.

$<T_E(t_j),I_E(t_j), F_E(t_j)>$ is the **neutrosophic degree of the emotions** at time

$t = t_j$, where:

$T_E(t_j)$ = degree of truth (strong-ness) of emotions at time t_j;

$I_E(t_j)$ = degree of indeterminacy (mixture of strongness and weakness) of emotions at time $t = t_j$;

$F_E(t_j)$ = degree of falsehood (weakness) of emotions at time $t = t_j$.

Similarly for $<T_{Th}(t_j),I_{Th}(t_j), F_{Th}(t_j)>$, that is the **neutrosophic degree of the thinking** at time $t = t_j$;

and $<T_B(t_j),I_B(t_j), F_B(t_j)>$, that is the **neutrosophic degree of the behavior** at time $t = t_j$.

5.9. Neutrosophic Degree of Personality

The neutrosophic degree of personality of an individual, at time $t = t_j$, $<T_{Pers}(t_j),I_{Pers}(t_j), F_{Pers}(t_j)>$, is the fusion of emotions, thinking, and behaviors at the time:

$$<T_{Pers}(t_j),I_{Pers}(t_j), F_{Pers}(t_j)> = <T_E(t_j),I_E(t_j), F_E(t_j)> \Delta <T_{Th}(t_j),I_{Th}(t_j), F_{Th}(t_j)> \Delta <T_B(t_j),I_B(t_j), F_B(t_j)>,$$

where Δ is the fusion operator.

Since, in general, for the same individual, the emotions, the thinking, and the behaviors change from time to time, the neutrosophic degree of personality also changes from time to time.

Therefore, the personality is dynamic; it varies in between a range. The range may be smaller or bigger upon each individual's psyche, space he lives in, his experience

and circumstances, his cognitive learning from others and so on.

But the individual personality's dynamicity is tiny with respect to the individual physical's dynamicity.

5.10. Dynamicity of Underego, Ego, and Superego

Further on, we explore Freud's Psychanalysis [16], and extend a part of it that got appreciation, while rejecting another part. He suggested the theory of *psychosexual development*.

We re-baptize Freud' "id" [16] to "underego" in order to better connect with "ego" and "superego" and make a symmetry {as in a neutrosophic triad of the form: (<antiA>, <neutA>, and <A>)}, and also because underego is below the ego, it is in the animal reign - where desires and impulses are almost uncontrolled, then we make a parallelism of all three.

The dynamicity of **underego**, **ego**, and **superego**, as in neutrosophy the dynamicity of <antiA>, <neutA>, and <A>, results in a fusion of all three: underego + ego + superego.

Partially underego and superego balance each other. The underego's desires and impulses are curbed by the superego.

The underego's desires and impulses are satisfied only in a certain degree, after fusing/combining with superego's rules and ego's own desires and impulses.

Underego is the deep dream.

Superego is the severe reality.

Ego is the equilibrium between deep dream & severe reality.

Ego is sweeten reality.

Underego's desires and dreams are blended with those of the superego, while ego's desires and planning are adopted.

For ego is formed by mixed traits of underego, superego, and ego's own traits.

In the underego there also rise up positive realistic desires, for examples to become a great scientist, or to be a leader. The superego may warn that it takes long time and, the neutrosophic probability (NP) that an event $<A>$ may occur in the future is:

$$NP(A) = (ch(<A>), ch(<neutA>), ch(<antiA>)) = (T, I, F).$$

Or, there is a chance to succeed $ch(<A>)$ {or T for truth}, a chance to fail $ch(<antiA>)$ {or F, from false}, and an indeterminate chance $ch(<neutA>)$ {or I, not clear, or a buffer zone between success and failure}.

But the Ego will strive to accomplish it.

5.11. Psychological Balance and Counter-Balance

Superego is a counter-balance to Underego, and the Ego is the balance pointer between them:

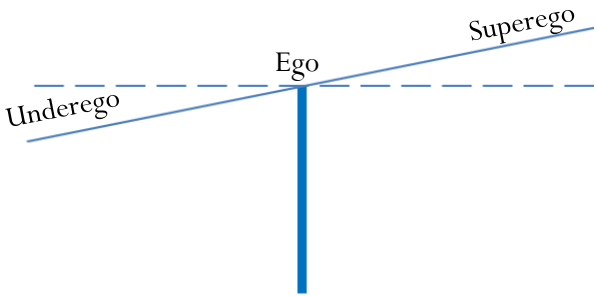


Diagram 8: Psychological Balance and Counter-Balance of Underego-Ego-Superego

5.12. Ego as semi-underego and semi-superego

Although partially organized and partially realistic and partially rational, the humans have sometimes irrational, unthank-full, unrealistic acts and behaviors.

That's why we consider the **ego** as **semi-underego** and **semi-superego**.

Unconscious plays a role in our personality, we like it or not. Unconscious pushes us in taking unthank-full decisions in a positive, neutral, or negative direction (upon our experience, environment, and circumstances).

When a lawyer has asked a criminal, why did he kill Jane Doe? He answered: "A voice told me in my head".

Who was that voice? His unconscious.

5.13. Critics of Psychoanalysis

The feminists heavily criticized Freud's psychoanalysis [16] because he was misogynistic (anti-women). Karen Horney, arguing that girls have "penis envy", responded that men cannot give birth so they have "womb envy"!

Freud was criticized by Shlomo Kalo too for: happiness is unreachable and that the natural desire of a human being is to exploit his fellow men for his own pleasure and benefit.

We agree, those are untrue.

We disagree with both Oedipus Cømplex (invoked by Freud) and Electra Complex (invoked by feminists).

We disagree that sexuality is at the center of human behavior.

Not only sexual wishes, as Sigmund Freud has asserted in "Three Essays on the Theory of Sexuality" (1905) [16], but all wishes repressed fall into aconscious and unconscious domain into latent states, and from there when some factor related to them appears, it triggers to the conscious under the form of negative energy turning into anxiety and depression.

Opposed to Freud [16], Jung [92] declared that sexuality was not at the base of all unconscious.

Only a sexually obsessed person may bring the sexuality at the core of personality's development.

Personality is in a „pre-scientific" or philosophical stage (C. George Boeree [79-80]). Only… theories…

Childhood experiences are important in the formation of individual personality, as Freud said, but not the most important. Learning and fitting into permanently and rapidly changing community and environment continue the whole life in shaping further the personality.

Not only internal conflicts (as Freud said) influence the dynamics of personality, but also *internal cooperation* and *neutral interactions* between feelings and thoughts. Similarly, *external conflicts, cooperation* and *neutral interactions* play an important role in personality's development. Not only the conflict, but the *non-conflict* as well.

Ego plays not only the role of mediator, but also of diminishing the conflict and of organizing the adaptation (Heinz Hartmann).

Personality develops from *social interactions* and *choices* (Erik Erikson, [19-21]). According to him, the psychosocial development stages arise throughout all lifespan from the contradictions <*A*> and <*antiA*> such as: *trust vs. mistrust, autonomy vs. drought, initiative vs. guilt, identity vs. identity-*

confusion, intimacy vs. isolation, generativity vs. stagnation, and so on.

Robert White (1950s) added to the ego: *effectance motivation* (the need to feel that you make on your surrounding a great impact), and *competence motive* (the need to make an impact on the world).

While psychoanalytic was considered "first force", behavioristic embraced by Hans Eysenck [43] and B. F. Skinner (*operant conditioning*, and *schedules of reinforcement)* was "second force", and humanistic "third force" that was developed by Abraham Maslow (*hierarchy of needs*) [66], Carl Rogers (*actualizing tendency* – considering that healthy people are *fully-functioning*), George Kelly, Viktor Frank land Ludwig Binswanger.

Social psychology (Greenwald and Banaji, A. Adler, E. Fromm [91, 96], K. Horney) and *cognitive psychology* (Tulving, Bargh and Chartrand) have proved the unconscious processes' role in people's attitudes, in automatic processes, and in procedural memories.

Albert Bandura (1977) invoked the *social-learning theory* and in general *Learning from Others* [36-42].

Hans Eysenck [43] linked biology with personality.

Heinz Kohut [70-72] proposed, as extension of psychoanalysis, in the second half of 20th century, the *Self Psychology* (the core of the personality is your self subjective

experience). This is referred to *healthy grandiosity* (the necessity to be mirrored by others – in order to feel healthy spiritually).

Various other personality theories got registered under the label of *Object Relations*, and were promoted by Margaret Mahler, Ronald Fairbairn, D. W. Winnicott, Melanie Klein etc. The idea used is that an individual's pattern of relationships with others recur and recur again.

5.14. Critics of Psychological Theories

In many psyche ideas, the theorists analyze selves and project the findings onto all humans. Thus, *the particular is attributed to the general*, which is not quite accurate.

Or they emphasize the data and experiments that support their theories, and ignore or hide data and experiments that disprove their theories or prove their theories are *not falsifiable* (not possible to disprove).

5.15. Psychanalysis of Transcendental Persons

Then we ask what about transcendental people?

While it is little probable that girls have "penis envy", it is highly probably that transcendental people some of them have "penis envy", and other have "womb envy" – depending on their sexual orientation, that's why several of them do surgeries.

For the same-sex couples, certainly the lesbians do not have "penis envy" nor do the gays have "womb envy".

5.16. Conscious Anxiety and Aconscious Anxiety

Due to unaccomplished desires or loneliness, we have, besides Karen Horney's "unconscious anxiety", *conscious anxiety* and *aconscious anxiety*. Human personality's drives do not consist on sexuality only as Freud asserted, but on more factors: environmental needs, cultural needs, religious needs, various professional needs, social and moral needs, skills needs etc. The ego makes some compromise between underego and superego.

5.17. Personality's Influence Factors

Personality is changing due to:

a) social interactions and individual's experiences [Erik Erikson, 19-21];

b) person's subjective experience of self (or self-being synonymous with personality) [Heinz Kohut, 70-72];

c) object relations theory (individual's recurrent pattern of relating to others) [Margaret Mahler, D. W. Winnicott, Ronald Fairbain and Melanie Klein];

d) learning from others [Albert Bandura, 36-42];

e) linguistic development [Gordon Allport];

f) *logotherapy* (Viktor Frankl [23-28]);

g) *social psychology* (the institutions modify people's behavior) [R. Linton & A. Kardiner];

h) system, the individual lives or works in, exercises strong affect (*modal personality*);

i) ideology, religion, tradition, politics, family, collectivity model a personality;

j) social work [Lucien Sève];

k) recurrent evolution of personality;

l) individual psychological character, which is at personality's core;

and so on.

5.18. Inferiority / Superiority Complex and Normal Standard

While Alfred Adler's **inferiority complex** is manifested in some persons believing they do not rise at the standards of the society, there is another category of persons that "suffer" from **superiority complex**!, believing they are much above the society's standards.

Yet, the majority of persons feel fits into the society at its required standards (neutrals, neither inferior nor superior to the standards – **normal standard**). As in neutrosophy: <*inferiority complex, neutral (no) complex, superiority complex*>.

5.19. Lifespan Personality Development

We agree with Erik Erikson's **lifespan** personality development [19-21], not only up to adolescence, as Freud proposed.

5.20. Neutrosophic Persona

Carl Jung's **persona** [92], which is a compromise between what the society expects an individual to be and who he really is, can be represented by a "neutrosophic mask" (**neutrosophic persona**) that has a degree of who he really is (his true self) (T), a degree of what the society expects from him to be (F), and a degree of indeterminancy (I) [a confusion state between who he is and what the society expects him to be, or a perceptible fake state].

Jung [92] has worked on transpersonal perspective.

5.21. Parallelism between Under-ego, Ego, and Super-ego

All three parts (underego, ego, and superego) produce positive, neutral, and negative emotions, thoughts, and behaviors in our lifespan.

Underego <antiA>	**Ego <neutA>**	**Superego <A>**
surrealistic	semi-realistic	realistic
idealistic	semi-idealistic	pragmatic
unnatural	semi-natural	natural
unconscious	semi-conscious and preconscious semi-unconscious, preunconscious	conscious and preconscious
animal and primitive impulses and instincts (Freud) libido's force (Freud)		human thinking
little devil	little angel & little devil	little God
fantasies temptations	semi-fantasies and semi-realities	realities
no regulations	semi-regulations	regulations
unfiltered feelings	semi-filtered feelings	filtered feelings
free imagination	"power of the ego" (Adam Cash)	
underego proposes big	ego decides upon the fusion of underego and superego	superego restricts short
unorganized	semi-organized	organized
pleasureful and painless	semi-pleasurefull and semi-painful	painful
dark part of personality (Freud)		
immoral	semi-moral	moral
irrational	semi-rational	rational
desires	takes a decision	restrictions
initiates and act	acts	regulates an act
provides energy	provides direction	provides norms
radical	in between radical and conservative	conservative

biological in the short term	bio-social in the middle term	social in the long term
not necessarily connected to the world	connected and semi-connected to the world	connected to the world
uncommon sense	semi-uncommon and semi-common senses	common sense
doesn't care about consequences	partially cares, partially doesn't care of consequences the Ego has its own wishes too, different from the Underego's	cares about consequences
force imperfection	force and influence semi-imperfection and semi-perfection	influence perfection
nonsense of right or wrong	semi-nonsense and semi-sense of right and wrong	has sense of right and wrong
taboos allowed	partially allowed taboos	proscription of taboos

Table 1: Under-ego / Ego / Super-ego connections

5.22. Scientific or Metaphoric?

Between 1920-1925, Freud has hypothesized the structure of mind as composed of three entities: **das Es**, **Ich**, **Überich**, which translated from German, mean: **It**, **I,** and **Over-I** respectively. But, in translation to English, they were Latinized, to sound more *scientific* than *metaphoric*, into: **Id**, **Ego** and **Super-Ego** (as Dr. C. George Boeree has remarked [79-80]).

5.23. Inner and Outer Conflicts and Cooperation among Underego, Ego, and Superego at all Conscious, Aconscious, and Unconscious Levels and Sublevels

The triad <*under-ego, ego, super-ego*> forms a neutrosophic triad, where under-ego is in contradiction with super-ego, and ego is a neutral (referee) between them.

5.24. Sub-Triads of <pluri-underegos, pluri-egos, pluri-superegos>

The underego, ego and superego manifest and operate in some degree, at each level (conscious, aconscious, unconscious), and at each type of sublevels {[preconscious, subconscious, semiconscious, semiunconscious, subunconscious, preunconscious] and [personal, group, collective]} interchanging and overlapping.

Don't we often hear inside voices simultaneously telling opposite thoughts, feelings, and behaviors? Don't we suddenly have confused ideas and mixed feelings in the same time? That's why one may consider refinements of the <underego, ego, superego> triad into a plurality of sub-triads, let's denote them <pluri-underegos, pluri-egos, pluri-superegos>.

Human behavior is extremely complex, and the result of many simultan interactions among pluri-underegos, pluri-egos, and pluri-superegos.

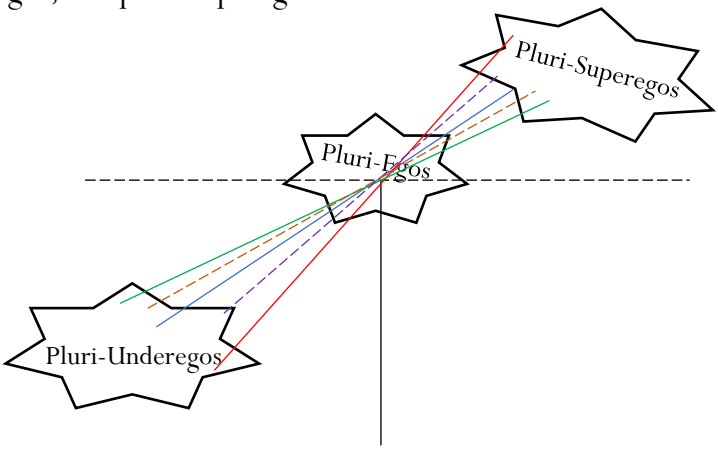


Diagram 9: Psychological Balances and Counter-Balances of Pluri-Underegos / Pluri-Egos / Pluri-Superegos

We cut up the neutropsyche into triplets of pluri-compartments.

Latent feelings and thoughts with various degrees of contradictions and similarities pop up simultaneously at the surface. They overwhelm our consciousness. Thus a pluri-(underego, ego, superego) triad is needed to deal with the situation… at a high degree of sophistication… A theory that contains many sub-theories…

Personal (real) experiences lead to various personalities.

Personality is unique as a fingerprint of heart, brain, and muscle.

Knowing somebody's personality, we may only partially predict his/her behavior.

The under-ego operates not only at the unconscious level, as Freud assumed, but at the aconscious and conscious levels as well.

"Consciousness is essentially self-conscious" (Jean-Paul Sartre).

The ego does not develop only during infancy, nor the super-ego develops only during the early childhood, as Freud asserted, but during the whole lifetime.

Similarly for the under-ego.

There is, indeed, an *inner conflict* between under-ego, ego, and super-ego, partially resolved by ego, which is a partial referee or semi-mediator.

Not only the inner conflict, but also the *inner stillness* [*Hesychasm*, in Greek] (Lindhard, 2018).

There is an *outer conflict* too between under-ego, ego, and super-ego since they operate at the conscious and acounscious levels as well.

We say that ego "partially" resolved the conflict, because in many cases the humans take actions that are irrational or anti-social in some degree.

The psyche's tendencies or propensities in general have degrees of conscious, aconscious, and unconscious. The ego deploys a plethora of defense in-some-degree mechanisms in order to overcome anxiety. Nonetheless, the ego often fails or partially fails during the lifespan since there is no human being not having experienced anxiety ever. Besides the inner conflict, there is an outer conflict between the egos of different individuals – due to competitions.

5.25. Eros, Aóristos, and Thanatos

Besides the **biological life instinct** and **death instinct** that Freud called "Eros" and respectively "Thanatos", we add for the first time the amalgamate instinct that has some degree of live and other degree of death that we call "**Aóristos**" (also a Greek term, that means indeterminate), while **Eros** (Gr.) means sexual, love or desire; and **Thanatos** (Gr.) = dark, cloudy or stormy.

Together with the **positive energy** (Eros) and **negative energy** (Thanatos) there often exists some **indeterminate energy** (confused: positive, in one sense,

and negative in other sense; or partially positive and partially negative) or **neutral energy** (neither positive nor negative) called "*Aoristos*".

Aoristos (can be refined (split) into two subparts as in refined neutrosophy: I_1 = indeterminate energy, and I_2 = neutral energy.

When *Eros* is stronger than *Thanatos* and *Aoristos* people prosper. If *Thanatos* is stronger than *Eros* and *Aoristos*, then people self-destruct. And if *Aoristos* is stronger than *Eros* and *Thanatos*, then people continuously oscillate between ups and downs, between prosperity and self-destruction. During our lifespan all these types of energies alternate: we have ups and downs, we have prosper periods and self-destruction actions, and mostly energies that have some degree of positivity and some degree of negativity (*Aoristos*).

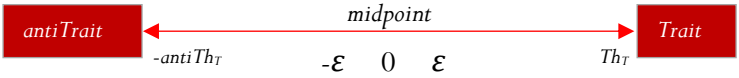
6. NEUTROSOPHIC PERSONALITY TRAITS
(A MATHEMATICAL STUDY IN PSYCHOLOGY)

We apply again the Refined Neutrosophy to the classical trait theories of personality. Let <*A*> be a trait (related to behavior, thought, or emotion), and <*antiA*> be the opposite of this trait.

6.1. Refined Neutrosophic Trait

We measure a trait by computing the degree of <*A*> and the degree of <*antiA*>, so each human is on the spectrum between two opposites, as many trait theorists concluded, and the human's position on the spectrum is varying (is dynamic).

There is no individual that entirely *(100%)* fits a trait; this may occur only in an idealistic way.



Refined Neutrosophic antiTrait –Trait Diagram

Of course, the constants: *-antiThr, +Thr,* and $\pm\varepsilon$ depend on each antiTrait/Trait pair, so they may be different from an antiTrait/Trait pair to another antiTrait/Trait pair. These constants are determined by psychological experts.

If the degree of the *Trait* is greater than or equal to the Trait's threshold (Th_T), then the individual is characterized by this Trait. Similarly, if the degree of *antiTrait* is less than or equal to the antiTrait's threshold (*antiThr*), then he/she is characterized by the antiTrait.

In a neighborhood of the midpoint, [-ε, ε], it is the most confused (*indeterminate*) degree (almost half antiTrait and half Trait) or antiTrait-Trait blend.

6.2. Pairs of Neutrosophic Personality Trait - antiTrait

The most used eleven pairs of neutrosophic personality Trait - antiTrait are:

Extraversion – Introversion

Conscientiousness – Unconscientiousness

Perfectionism – Imperfectionism

Sensitivism – Insensitivism

Novator – Conservator

Self Esteem – Self NonEsteem

Agreeableness – Disagreeableness

Openness to Intellect & Experience – Closeness to Intellect & Experience

Inhibition – Disinhibition

Flexibility – Rigidity

Emotivism [Neuroticism (Hans Eysenck)] – Non-Emotivism

Obsessionality – Nonobsessionality

Cautiousness – Impulsivity

Shyness – Boldness

Honesty – Dishonesty

Hostility [Psychoticism (Hans Eysenck)] – Nonhostility

6.3. Degrees of Trait & antiTrait

Using clinical evidences from therapy sessions, clinical interviews, psychological case studies (relying on the observer's interpretation), self-report methods (relying on the individual's memory), the *neutrosophic questionnaire* {based on *(t, i, f)*-neutrosophic response for each question, i.e. degree of truth (t), degree of indeterminacy (unsure, unclearness), and degree of falsehood (f)}, correlational and experimental procedures that implicate creations and utilizations of personality tests that are measured using neutrosophic statistics, observations helping in prediction using neutrosophic probability, the psychometric tests and so on, a psychiatric researcher can estimate with certain accuracy an individual's degree of each Trait and antiTrait.

There are personality Traits that link to genetics (heritability), and others with environment.

The *Trait Theory* is called by some authors *Dispositional Theory*.

Yet, these researches have a higher or lower *degree of subjectivity*, and a *degree of objectivity*.

Therefore, let's have a Trait / antiTrait pair, and let x be an individual belonging to a group of people S, then one defines for the first time:

$d_{Trait} : S \rightarrow [0, 1]$,

$d_{Trait}(x)$ = the degree of the Trait that characterizes individual x,

and $d_{antiTrait} : S \rightarrow [-1, 0]$,

$d_{antiTrait}(x)$ = the degree of the antiTrait that characterizes individual x.

6.4. Neutrosophic Trait Operator

The *Neutrosophic Trait Operator*, combining the opposites, is the cumulative degree of individual x with respect to both the Trait and the antiTrait, and it is defined for the first time as:

$$d_{Trait \,\&\, antiTrai} : S \rightarrow [-1, 1],$$

$$d_{Trait \,\&\, antiTrai}(x) = d_{Trait}(x) + d_{antiTrait}(x).$$

6.4.1. Procedure

For each Trait – antiTrait pair, we apply the above *Neutrosophic Trait – antiTrait Diagram*. Then, we compute the degree of the Trait $d_{Trait}(x)$ that characterizes the individual x, and the degree of antiTrait $d_{antiTrait}(x)$.

Afterwards, one employs the Neutrosophic Trait Operator $d_{Trait\ \&\ antiTrait}(x)$

and one compares it with the two thresholds, *Thr* and *antiThr*:

If $d_{Trait\ \&\ antiTrait}(x) \geq +Thr$, then the individual is categorized as definitively belonging to the *Trait*,

If $d_{Trait\ \&\ antiTrait}(x) \leq -\ antiThr$, then the individual is categorized as definitively belonging to the *antiTrait*.

If $d_{Trait\ \&\ antiTrait}(x) \in (-\varepsilon,\ +\varepsilon)$, then the individual is categorized as been in a totally indeterminate state between the *Trait* and *antiTrait*.

If $d_{Trait\ \&\ antiTrait}(x) \in (\varepsilon,\ Thr)$, then the individual is categorized as mostly belonging to the *Trait*.

And finally, if $d_{Trait\ \&\ antiTrait}(x) \in (-antiThr,\ -\varepsilon)$, then the individual is categorized as mostly belonging to the *antiTrait*.

6.5. Personality Trait Theories

The physical Trait-antiTrait of a person is influenced by many factors, such as: genotypes, environment, conditions of life (food, water, living space), culture, education (from parents and society), weather, friends and enemies, etc.

There exist *traits isolated* from other traits [R. Meili], yet many are *interconnected traits*.

Trait theorists consider that over the time, the traits remain relatively stable, but their range varies from an individual to another.

There are *inherited traits* (Loehlin, Willerman & Horn, 1988) as well.

Nonetheless, many traits are modelled by social factors.

6.6. Cardinal / Group / Central / Secondary Traits

G. Allport has classified the **traits** into: **cardinal** (specific to an individual, making him/her unique from others), **central** (characterizing all people), and **secondary** (that are only observed in peculiar circumstances).

We add now a new type, called **group** trait, that represents the trait specific to a particular (social, political, economical, religious etc.) group.

6.7. Alternative Theories of Trait Personality

There is a multitude of alternative theories of trait personality, based on: *Type Indicator* (Myers-Briggs), *System of Needs* (Henry Murray), *Biopsychology* (Gray), *Questionnaire* (R. Cattell), *Structure of Intellect* (J. P. Guilford), and so on.

We present one of them below and extend it by neutrosophication:

6.7.1. Myers-Briggs Type Indicator

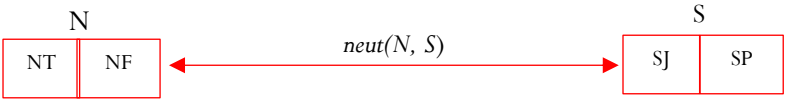
The **Myers-Briggs Type Indicator** (MBTI), developed by Isabel Briggs-Myers and Katharine C. Briggs in the 1940s, accepts the extroversion and introversion, which are connected with the **Perceiving Functions** (*intuition vs. sensing*), the **Judging Functions** (*logic vs. emotion*) and a **Third Dimension** (*arriving to conclusion vs. keeping open answer*). They have further refined the Perceiving Functions "N" (intuition) into "NT" (scientific) and "NF" (humanist) temperament. And "S" (sensing) was refined into "SJ" (traditionalist) and "SP" (performer) temperament.

6.7.2. Myers-Briggs Neutrosophic Type Indicator

We extend, from a neutrosophic point of view the Perceiving Functions (*intuition vs. sensing*), the Judging Functions (*logic vs. emotion*) and the Third Dimension (*arriving to conclusion vs. keeping open answer*).

6.7.2.1. Perceiving Neutrosophic Functions

Using a refined neutrosophic approach, we obtain the below neutrosophic diagram:



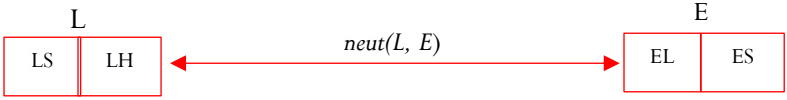
The neutralities of *N* and *S*, denoted by *neut(N, S)*, stand for large majority of people, since everybody has a degree of *NT*, a degree of *NF*, a degree of *SJ* and a degree of *SP*, i.e. $neut(N, S) = \alpha_1 \cdot NT + \beta_1 \cdot NF + \gamma_1 \cdot SJ + \delta_1 \cdot SP$, where $\alpha_1, \beta_1, \gamma_1, \delta_1 \in [0, 1]$.

The sum of this psychological parameters is *1* if only one source provides estimators about the values of *NT, NF, SJ, SP* or if all sources (should they be more) are totally dependent. In the case when four independent sources furnished information, then the sum $\alpha_1 + \beta_1 + \gamma_1 + \delta_1 \leq 4$.

6.7.2.2. Judging Neutrosophic Functions

We now refine for the first time the **Judging Functions** "*L*" (logic) into "*LS*" (soft logic, soft science) and "*LH*" (hard logic, hard science) temperament and "*E*" (emotion) into "*EL*" (low emotions) and "*ES*" (strong emotions) temperament.

Whence the refined neutrosophic diagram is similar to the people:



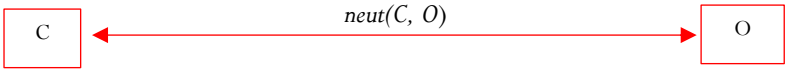
And the neutralities of *L* and *E*, denoted by *neut(L, E)* represent the vast majority of humans, everybody having some degrees of *LS, LH,* and *EL, ES*:

$$neut(L, E) = \alpha_2 \cdot LS + \beta_2 \cdot LH + \gamma_2 \cdot EL + \delta_2 \cdot ES,$$

where $\alpha_2, \beta_2, \gamma_2, \delta_2 \in [0, 1]$, and in general $\alpha_2 + \beta_2 + \gamma_2 + \delta_2 \leq 4$.

6.7.2.3. Third Neutrosophic Dimension

For the Third Dimension, the corresponding refined neutrosophic diagram is:



where C = conclusion, O = open answer, and neut(C, O) = $\alpha_3 \cdot C + \beta_3 \cdot O$, with $\alpha_3, \beta_3 \in [0, 1]$, and $\alpha_3 + \beta_3 \leq 2$.

If we combine all three neutrosophic diagrams neutralities, we get:

$$neut(N, S, L, E, C, O) =$$
$$(\alpha_1 \cdot NT + \beta_1 \cdot NF + \gamma_1 \cdot SJ + \delta_1 \cdot SP,$$
$$\alpha_2 \cdot LS + \beta_2 \cdot LH + \gamma_2 \cdot EL + \delta_2 \cdot ES,$$
$$\alpha_3 \cdot C + \beta_3 \cdot O),$$

with all parameters belonging to *[0,1],* which more accurately represents the personality's traits of an individual.

6.7.3. Allport Trait Theory

In 1937 G. W. Allport [32] suggested that the behavior is strongly determinate by internal motivational and cognitive processes (traits, temperament, intelligence, attitudes, habits, and skills).

6.7.4. Authoritarian Personality

T. W. Adorno, E. Frenkel Brunswik, D. J. Levinson, & R. N. Sanford [59] proposed in 1950 that some individuals are prone to *prejudice* due to their personality type, whence they arrive at an Authoritarian Personality sensitive to totalitarianism. They develop prejudice against weaker (minority) groups.

Critics to this theory argued that harsh parenting upbringing of a child not necessarily make a prejudice person. In an authoritarian social group not all members are authoritarian (for examples, the Fascists, or the Nazis) [62].

6.8. Popular Theories of Trait Personality

The idea was to reduce the study of a large number of personality traits, using the *factor analysis* employed in statistics and building *hierarchical taxonomies* [classifications], to the study of only several most important personality traits.

These factors are mostly uncorrelated (called *orthogonal factors*), however they possess a reduced positive correlation between them.

There are two types of factors: *higher-order factors*, and *lower-order factors* (facets) – the last ones been subparts of the first.

We recall that:

> **Factor Analysis** is the **"**statistical technique that can uncover relationship patterns underlying hundreds of interacting phenomenon (…)
>
> (…) factor analysis is used to analyze large numbers of dependent variables to detect certain aspects of the independent variables (called *factors*) affecting those dependent variables - without directly analyzing the independent variables. It enables an analyst to reduce the number of elements to be studied and to observe how they are interlinked."
>
> [*InvestorWords / Biggest, Best Investing Glossary*,
> accessed on 15th March 2018:
> http://www.investorwords.com/7283/factor_analysis.html]

Two main methods are well-known: Three-Factor Model, and Five-Factor Model.

6.8.1. Three-Factor Model

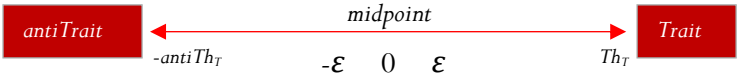
Hans Eysenck [43] (1947, 1966) asserted that three major traits (*extraversion/introversion, neuroticism/stability,* and *psychoticism/normality*) are sufficient for studying the personality.

Neuroticism (controlled by the sympathetic nervous system) means unstable, overreacting, overemotional, quickly upset and anger.

Psychoticism (due to high level of testosterone) means kind of abnormal, aggressive, a loner, antisocial, unempathic and cruel.

6.8.2. Three-Factor Neutrosophic Model

Using the previous the Refined Neutrosophic antiTrait – Trait (or <antiA> and <A> as in neutrosophy) Diagram



and the Neutrosophic Trait Operator for each of the three Trait - antiTrait pairs, then we compute the degree $d_{Trait\ \&\ antiTrait}(x)$ of Trait/antiTrait {or <A> / <antiA>} of individual x:

$$d_{Trait\ \&\ antiTrait}(x) = \alpha_{<Aj>}(x) + \beta_{<antiAj>}(x) \in [-1,\ 1],$$

one gets:

$$d(Extraversion\ \&\ Introversion) = \alpha_{<Extraversion>}(x) + \beta_{<Introversion>}(x) \in [-1,\ 1],$$

$$d(Neuroticism\ \&\ Stability) = \gamma_{<Neuroticism>}(x) + \delta_{<Stability>}(x) \in [-1,\ 1],$$

$$d(Psychoticism\ \&\ Normality) = \zeta_{<Psychoticism>}(x) + \eta_{<Normality>}(x) \in [-1, 1];$$

where $\alpha_{<Extraversion>}(x), \gamma_{<Neuroticism>}(x), \zeta_{<Psychoticism>}(x) \in [0, 1]$,

and $\beta_{<Introversion>}(x), \delta_{<Stability>}(x), \eta_{<Normality>}(x) \in [-1, 0]$.

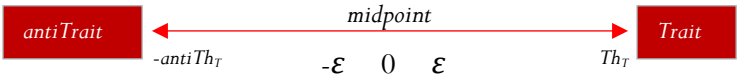
In each of the above three cases, if the cummulative degree $d_{Trait\ \&\ antiTrait}(x)$ is positive the individual bends towards the Trait (extraversion, neuroticism, respectively psychoticism), but if the cummulative degree $d_{Trait\ \&\ antiTrait}(x)$ is negative the individual bends towards the antiTrait (introversion, stability, respectively normality).

6.8.3. Five-Factor Model

Many psychologists suggested that five major traits (*neuroticism, extraversion, oppenness to experience, agreableness,* and *consciousness*) are enough for studying the perssonality.

6.8.4. Five-Factor Neutrosophic Model

Similarly, with the help of the previous Refined Neutrosophic Trait – antiTrait (or <A> and <neutA> as in neutrosophy) Diagram



and the Neutrosophic Trait Operator for each of the three Trait - antiTrait pairs, we compute the cumulative degree $d_{Trait\ \&\ antiTrait}(x)$ of Trait/antiTrait of individual x:

$$d_{\text{Trait \& antiTrait}}(x) = d_{<A> \,\&\, <antiA>}(x) = \alpha_{<Aj>}(x) + \beta_{<antiAj>}(x) \in [-1, 1],$$

where $\alpha_{<A>}(x) \in [0, 1]$,

and $\beta_{<antiA>}(x) \in [-1, 0]$.

The Trait / antiTrait (or <A> / <antiA>) are:

neuroticism / stability, extraversion / introversion, oppenness to intelect & experience / closeness to intelect & experience, agreableness / disagreeableness, and consciousness / unconscientiousness.

A degree in between each of the above Trait – antiTrait is calculated. Each individual's neutrosophic personality is characterized by a degree of indeterminacy in between (Trait, antiTrait).

6.8.5. Sixteen-Factor Trait Model

In 1965 R. B. Cattell has argued that few (three or five) factors are insufficient for the study of personality. He has classified the factors into *source factors* (less visible) and *surface factors* (very visible).

Cattell proposed sixteen **Traits**:

warmth, intellect, emotional stability, agressiveness, liveliness, dutifulness, social assertiveness, sensitivity, paranoia, abstractness,

introversion, anxiety, open mindedness, independence, perfectionism, and tension.

Their corresponding **antiTraits** are:

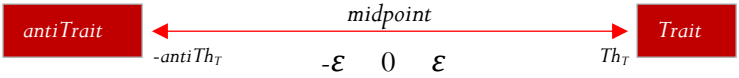
warmth / coldness, intellect / instinctive, emotional stability / emotional instability, agressiveness / non-agressiveness, liveliness / wild, dutifulness / rebellious, social assertiveness / withdrawn, sensitivity / insensitivity, paranoia / trusting, abstractness / practical, introversion / extraversion, anxiety / confident, open mindedness / close minded, independence / dependence, perfectionism / disorganized, and tension / relaxed.

6.8.6. n-Factor Trait Neutrosophic Model

As an easy generalization of all trait models, we consider, for the first time, any number $n \geq 1$ of *Traits* $<A_j>$ and their corresponding *antiTraits* $<antiA_j>$, for $1 \leq j \leq n$:

$$<A_1> / <antiA_1>, <A_2> / <antiA_2>, \ldots, <A_n> / <antiA_n>.$$

We use the Refined Neutrosophic Trait – antiTrait (or <A> and <neutA> as in neutrosophy) Diagram:



If the degree of the *Trait* is greater than or equal to the Trait's threshold (Th_T), then the individual is characterized by this Trait. Similarly, if the degree of *antiTrait* is less than

or equal to the antiTrait's threshold (*antiThr*), then he/she is characterized by the antiTrait.

In a neighborhood of the midpoint $[-\varepsilon, \varepsilon]$, it is the most confused (*indeterminate*) degree (almost half Trait and half antiTrait) or Trait-antiTrait blending!

Then, we use the Neutrosophic Trait Operator for each of the *n*

($Trait_j$ / $antiTrait_j$) pairs, in order to compute the cumulative degree $d_{Trait\ \&\ antiTrait}(x) = d_{<Aj>\ \&\ <antiAj>}(x)$ of $Trait_j$/$antiTrait_j$:

$$d_{<Aj>\ \&\ <antiAj>}(x) = \alpha_{<Aj>}(x) + \beta_{<antiAj>}(x) \in [-1, 1],$$

where $\alpha_{<Aj>}(x) \in [0, 1]$ means degree of $Trait_j$ ($<A_j>$),

and $\beta_{<antiAj>}(x) \in [-1, 0]$ means degree of $antiTrait_j$ ($<antiA_j>$),

for any $1 \leq j \leq n$.

6.8.6.1. Discussion

Afterwards, we apply the above Neutrosophic $Trait_j$ / $antiTrait_j$ Diagram.

We compare $d_{<Aj>\ \&\ <antiAj>}(x)$ with the two thresholds, Thr_j and $antiThr_j$:

– If $d_{<Aj>\ \&\ <antiAj>}(x) \geq +Thr_j$, then the individual is categorized as definitively belonging to the $Trait_j$,

– If $d_{<Aj>\ \&\ <antiAj>}(x) \leq -\ antiThr_j$, then the individual is categorized as definitively belonging to the $antiTrait_j$.

– If $d_{<Aj> \,\&\, <antiAj>}(x) \in (-\varepsilon, +\varepsilon)$, then the individual is categorized as been in a totally indeterminate state between the $Trait_j$ and $antiTrait_j$.

– If $d_{<Aj> \,\&\, <antiAj>}(x) \in (\varepsilon, Thr_j)$, then the individual is categorized as mostly belonging to the $Trait_j$.

– If $d_{<Aj> \,\&\, <antiAj>}(x) \in (-antiThr_j, -\varepsilon)$, then the individual is categorized as mostly belonging to the $antiTrait_j$.

With respect to any personality Trait, an individual has a degree of blending of the Trait with its antiTrait (which actually correspond to $<neutA>$ in neutrosophy), and this is changing all the time. Only in pure theory an individual's personality Trait or antiTrait is *100%*.

7. NEUTROSOPHIC TEMPERAMENTS

Although the temperament is part of Trait Personality, on two dimensions: *stable / unstable,* and *extroverted / introverted*, which are orthogonal traits, we dedicate a special section to the temperaments since they are well-known and got a general acceptance.

7.1. The Four Classical Temperaments

The classical **four temperaments** are: sanguine (optimistic), choleric (angry), melancholic (sad), and phlegmatic (lethargic), as proposed by Hippocrates – a Greek physician in the year about 400 B.C. – that characterize the behavior of humans.

7.2. Definition of Neutrosophic Temperament

Neutrosophic Temperament is a mixture of all four classical temperaments, since nobody in the world has a pure classical temperament. Actually, everybody has a degree of each of them: s% sanguine, c% choleric, m% melancholic, and p% phlegmatic. Whichever is the highest among s, c, m, p, that's the person's frequent classical temperament style,

There are quadruple infinitely many neutrosophic temperaments.

Where $s, c, m, p \in [0, 1]$,

and $0 \leq s + c + m + p \leq 4$.

But the psychological parameters *s, c, m, p* vary upon time, age, situation, experience, environment etc. Also, they are different for each individual.

There are cases when two or more psychological parameters among *s, c, m, p* have the same value or their values are close, making the individual to be characterized once sanguine, and other time choleric - for example.

We recall from Chapter 5 the *Refined Neutrosophic antiTrait –Trait Diagram* and apply it to the antiTrait / Trait = *introverted / extroverted* set horizontally:

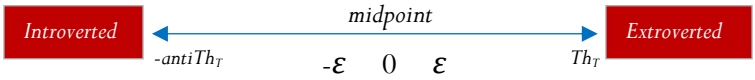
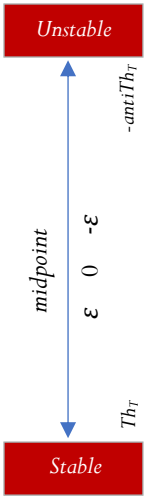


Diagram 10: Refined Neutrosophic Introverted – Extroverted Diagram

and then we apply it to the antiTrait / Trait = *unstable / stable* set vertically, since these two Traits are orthogonal:



7.3. Neutrosophic Diagram of Temperaments

We re-adjust and extend the classical diagram of the temperaments

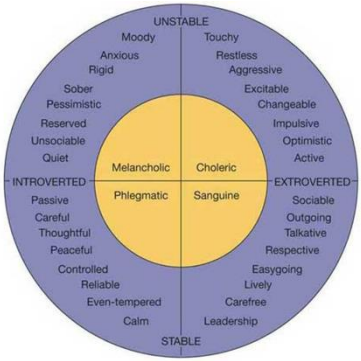


Diagram 11: Classical Diagram of Temperaments

[McLeod, S. A. (2017). Theories of personality. [15] Retrieved from www.simplypsychology.org/personality-theories.html]

in order to be able to compute *neutrosophic degrees of personalities,* and thus we introduce now for the first time the *Neutrosophic Diagram of Temperaments*:

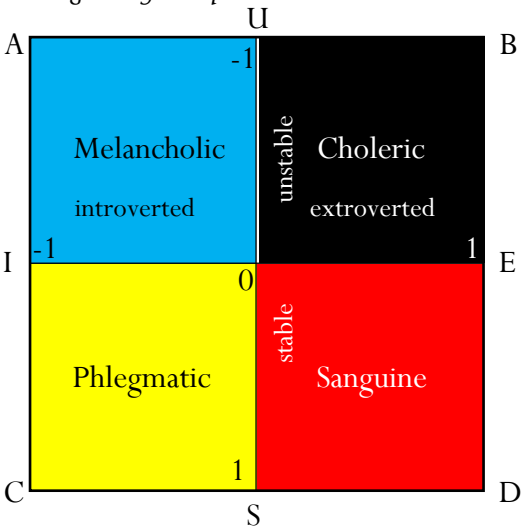


Diagram 12: Neutrosophic Diagram of Temperaments

This is a *2×2* square. "*O*" is the origin (and center of the square).

The horizontal axis *IE* (*I* = Introverted, and *E* = Extroverted) is measured in negative degree of appurtenance to Introverted, from *-1* to *0*, and in positive degree of appurtenance to Extroverted, from *0* to *+1*.

The vertical axis *US* (*U* = Unstable, and *S* = Stable) is also measured in negative degree of appurtenance to

Unstable, from *-1* to *0*, and in positive degree of appurtenance to extroverted from *0* to *+1*.

Since the two antiTrait – Trait pairs (introverted / extroverted, and unstable / stable) are orthogonal, we designed their corresponding axes orthogonally.

The vertical axis is directed in an opposite sense with respect to the Cartesian System of Coordinates, but this is done in purpose to keep the four classical temperaments in the same quadrants.

We recall from Chapter 5 the **Degrees of Trait & antiTrait** in order for this section to be self-contained.

Let's have a Trait / antiTrait pair, and let x be an individual belonging to a group of people S, then one defines for the first time:

$d_{Trait} : S \rightarrow [0, 1]$,

$d_{Trait}(x)$ = the degree of the Trait that characterizes individual x,

and $d_{antiTrait} : S \rightarrow [-1, 0]$,

$d_{antiTrait}(x)$ = the degree of the antiTrait that characterizes individual x.

And we recall from Chapter 5 the Neutrosophic Trait Operator.

The *Neutrosophic Trait Operator*, combining the opposites, is the cumulative degree of individual x with respect to both

the Trait and the antiTrait, and it is defined for the first time as:

$d_{Trait\ \&\ antiTrai} : S \rightarrow [-1, 1]$,

$d_{Trait\ \&\ antiTrai}(x) = d_{Trait}(x) + d_{antiTrait}(x)$.

7.4. Applications of the Neutrosophic Temperaments

Assume a psychiatrist, after many sessions, neutrosophic questionnaires and observations measured with neutrosophic statistics, has gotten to the conclusion that George P.'s two temperament dimensions are estimated with a certain accuracy as:

– degree of stable (trait) is $d_{GP}(\text{stable}) = 0.2 \in [0, 1]$,

– degree of unstable (antiTrait) is $d_{GP}(\text{unstable}) = -0.5 \in [-1, 0]$;

and

– degree of extroverted (trait) is $d_{GP}(\text{extroverted}) = 0.9 \in [0, 1]$,

– degree of introverted (antiTrait) is $d_{GP}(\text{introverted}) = -0.3 \in [-1, 0]$.

Then $d_{GD<stable>\ \&\ <unstable>}(x) = d_{GP}(stable) + d_{GP}(unstable) = 0.2 + (-0.5) = -0.3$,

and

$$d_{GD<extroverted> \& <introverted>}(x) = d_{GP}(extroverted) + d_{GP}(introverted) = 0.9 + (-0.3) = +0.6.$$

7.4.1. Neutrosophic Single-Valued Diagram of Temperaments (2 factors)

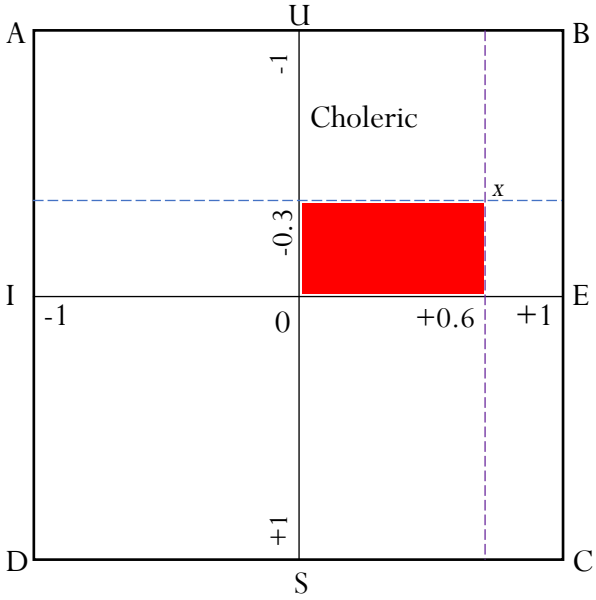


Diagram 13: Neutrosophic Single-Valued Diagram of Temperaments

According to our Neutrosophic Diagram of Temperaments, individual *x* is a choleric (at the intersection of dated vertical line passing through *+0.6* and dated horizontal line passing through *-0.3*.

Considering that any person has a degree of cholericity between 0 and 1, i.e the area of the quadrant *UOEB*, then his degree of cholericity with respect to other people is: the shaded area $(0.6 \times 0.3 = 0.18)$ divided by the whole quadrant area $(1 \times 1 = 1)$, therefore 18%.

7.4.2. Neutrosophic Interval-Valued Diagram of Temperaments (2 factors)

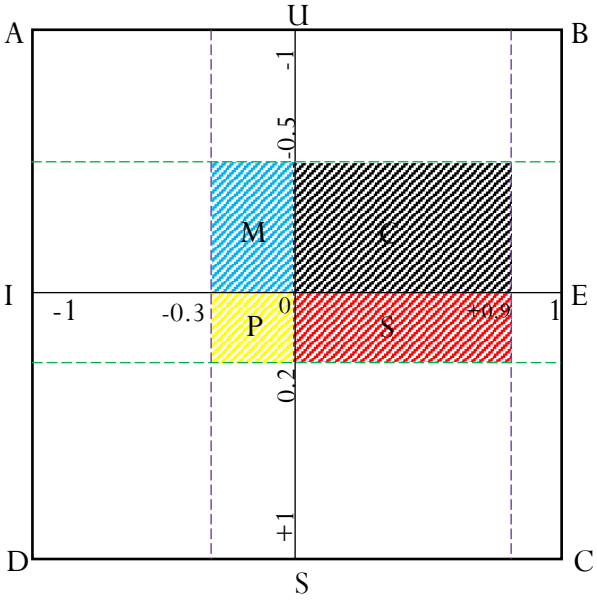


Diagram 14: Neutrosophic Interval-Valued Diagram of Temperaments

This neutrosophic diagram more accurately portraits individual *x*, which has degrees of all four classical temperaments. Let's compute them:

Degree of Phlegmatic (yellow):

d(P) = area of little rectangle P {that is equal to $0.2 \times 0.3 = 0.06$},

divided by the whole shaded rectangle's area that corresponds to individual *x*

$\{(0.3+0.9)\times(0.2+0.5) = 1.2\times 0.7 = 0.84\}$, therefore:

$$d(P) = \frac{0.06}{0.84} \approx 7.14\%,$$

Similarly, Degree of Sanguine (red) is

$$d(S) = \frac{0.18}{0.84} \approx 21.43\%$$

Degree of Choleric (black) is

$$d(C) = \frac{0.45}{0.84} \approx 53.57\%$$

Degree of Melancholic (blue) is:

$$d(M) = \frac{0.15}{0.84} \approx 17.86\%$$

In conclusion, individual *x* is mostly choleric and sanguine. Interval-Valued Diagram gives more information than Single-Valued Diagram

7.4.3. Neutrosophic Single-Valued Diagram of n-Factors of A Trait Personality

The Neutrosophic Single-Valued Diagram of Temperaments (*2* factors) characterizes an individual's temperament as a point (dimension *0*), whose coordinates are the cumulative degrees for each of the two *2* orthogonal antiTrait – Trait pairs, point that is included into a 2×2 square, since for the classical temperaments one analyzes only *2* orthogonal antiTrait – Trait pairs: introverted-extroverted and unstable-stable.

If one analyzes three orthogonal two-by-two antiTrait-Trait pairs, the Neutrosophic Single-Valued Diagram (*3* factors) will still be a point (dimension *0*), whose coordinates are the cumulative degrees for each of the two *3* orthogonal antiTrait – Trait pairs, point included into a $2 \times 2 \times 2$ cube.

And, as a generalization, for $n \geq 1$, orthogonal two-by-two antiTrait-Trait pairs, the Neutrosophic Single-Valued Diagram (n factors) will still be a point (dimension *0*), whose coordinates are the cumulative degrees for each of the two n orthogonal antiTrait – Trait pairs, point included into a 2^n hyper-cube.

7.4.4. Neutrosophic Interval-Valued Diagram of n-Factors of A Trait Neutrosophic Model

The Neutrosophic Interval-Valued Diagram of Temperaments (dimension *2*) characterizes an individual's temperament as a rectangle (dimension *2*) included into a *2×2* square, since for the classical temperaments one analyzes only *2* orthogonal antiTrait – Trait pairs: introverted-extroverted and unstable-stable.

If one analyzes three orthogonal two-by-two antiTrait-Trait pairs, the Neutrosophic Interval-Valued Diagram (*3* Factors) will be a prism (dimension *3*) included into a *2×2×2* cube.

In general, for $n \geq 1$ orthogonal two-by-two antiTrait-Trait pairs, the Neutrosophic Interval-Valued Diagram will be a hyper-prism (dimension n) included into a 2^n hyper-cube.

8. NEUTROSOPHIC EVOLUTION OF TRAIT PERSONALITY: DEGREES OF EVOLUTION, INDETERMINACY, AND INVOLUTION

Through adaptation and due to social selection some personality traits ***evolve*** (and the genes that cause them come into expression), others remain unchanged (***neutra*l**) or their change is unclear or ***indeterminate*** as in neutrosophy (and the genes that cause them stay the same or their change is unclear), and a third category of personality traits - not or less needed in the new environment – ***involve*** (and the genes that cause them come off their expression).

8.1. Example of Degree of Personality Evolution, Indeterminacy (Neutrality), and Involution

Assume an individual, proven to be *passive*, *careful, respective,* and *sociable* [four personality traits] in his old job's friendly environment, moves with his new job to a hostile tough environment.

Then, in order to survive and to adapt to the new socially unfriendly environment, more *active* he has to be in order not to be fired;

{therefore one has *trait evolution*: from "passive" to "active"}.

He remains *careful*, since he lives in a tough environment and needs to survive;

{hence *trait neutrality*: his previous trait "careful" does not change}.

In his old job's friendly environment he was *respective from sincerity*, living and working among nice employees, but in his new job's unfriendly environment he is still respective, he has to be, but he is *respective insincerely* because of fear of job security;

{so *trait indeterminacy*: his previous trait "respective" does change in itself, from "sincere respective" to "insincere respective"}.

But, he becomes less sociable and up to *unsociable* (because he gets cautious in going out with colleagues, since they are rude around him – and he wants to avoid their hostility);

{this is *trait involution:* from "sociable" to "unsociable"}.

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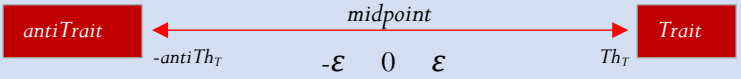
Neutropsyche is the psychological theory that studies the soul or spirit using the neutrosophy and neutrosohic theories.

Neutropsychic Personality is a neutrosophic dynamic open psychological system of tendencies to feel, think, and act specific to each individual.

Neutrosophic Refined Memory: that restructured the division of memory into: consciousness, *aconsciousness* (which we introduce as a blend of consciousness and unconsciousness), and unconsciousness.

In ***Neutrosophic Psychoanalysis*** Freud's „id" (das Es) was renamed „under-ego" for a symmetry connection with „ego" and „super-ego" and a part his Psychoanalysis was extended, while other part rejected.

All memories have degrees of conscious (c), acounscious (a), and unconscious (u).Then the Refined Neutrosophic Trait-antiTrait Diagram was created:



Each individual has a *degree of antiTrait* and a *degree of Trait* with respect to each antiTrait-Trait personality pair.

Then two Neutrosophic Single-Valued and respectively Interval-Valued Diagrams were constructed, that were extended to any personality dimension $n \geq 1$, where n is the number of antiTrait-Trait pairs.

The Trait Personality manifests a *Neutrosophic Evolution: with Degrees of Evolution, Indeterminacy, and Involution*. Through adaptation and due to social selection, some personality traits *evolve* (and the genes that cause them come into expression), others remain unchanged (*neutral*) or their change is unclear or *indeterminate* as in neutrosophy (and the genes that cause them stay the same or their change is unclear), and a third category of personality traits - not or less needed in the new environment – *involve* (and the genes that cause them come off their expression).

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